

GRADE 8 COMPLETE NOTES

PRE TECHNICAL STUDIES

The PDF Comprises part of the notes for the Named Learning Area

**FOR COMPLETE NOTES & SCHEMES OF
WORK FOR GRADES 1-8**

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Strand 1.1: Foundations of Pre-Technical Studies - Fire and Data Safety

Lesson 1: Understanding Fire Causes

1. Causes of Fire:

- **Flammable Substances:**

- **Chemicals:** Used in laboratories (e.g., solvents, fuels).
- **Common Materials:** Such as paper, wood, fabric, and oily rags.
- **Gases:** Like propane and butane used in workshops.

Lesson 2: Preventing Fire

2. Preventing Fires:

- **Proper Storage:**

- Flammable materials stored in designated areas with proper ventilation.
- Separate storage for different types of materials to prevent chemical reactions.

- **Regular Maintenance:**

- Checking electrical equipment for wear and tear, frayed wires, or damaged plugs.
- Ensuring machinery is well-lubricated to prevent overheating.

- **Safety Protocols:**

- Clearing workspaces from unnecessary clutter to reduce fire hazards.
- Displaying and following emergency evacuation plans.

Lesson 3: Firefighting Techniques

3. Firefighting Techniques:

- **Cooling:**

- Using water hoses or fire extinguishers to cool down the flames.
- Emergency showers for individuals with chemical burns.

- **Smothering:**

- Utilizing fire blankets to cover flames and cut off their oxygen supply.
- Deploying foam-based fire suppressants to smother liquid fires.

- **Interrupting:**

- Using fire extinguishers with appropriate agents for different fire types (e.g., ABC fire extinguishers).

Explanation: ABC fire extinguishers are versatile and effective for three classes of fires - A (ordinary combustibles), B (flammable liquids), and C (electrical fires).

Lesson 4: Data Threat Analysis

4. Threats to Data:

- **Malware:**

- Viruses, including trojans, worms, spyware, ransomware, and adware.

- **Phishing:** Attempts to trick individuals into revealing sensitive information through fake emails or websites.
- **Hacking:**
 - Unauthorized access by individuals seeking to manipulate or steal data.
 - Data breaches where sensitive information is accessed without permission.
- **Data Corruption:**
 - Software bugs causing unexpected errors and data loss.
 - Hardware failures, such as a malfunctioning hard drive leading to data corruption.

Lesson 5: Securing Electronic Data

5. Securing Data:

- **Use Strong Passwords:**
 - Combine uppercase and lowercase letters, numbers, and symbols (e.g., P@ssw0rd).
 - Avoid easily guessable passwords, like "password" or "123456."
- **Regularly Back Up Data:**
 - Use external devices like USB drives, external hard drives, or cloud services (e.g., Google Drive).
 - Schedule automatic backups to ensure consistent data protection.
- **Install and Update Antivirus Software:**
 - Choose reputable antivirus software and keep it up-to-date to guard against new threats.
 - Enable real-time scanning for continuous protection.

Lesson 6: Hands-On Application

6. Hands-On Application:

- **Creating a Strong Password:**
 - Utilize a mix of letters, numbers, and symbols to enhance complexity.
 - Avoid personal information, like birthdays or names, to strengthen security.
- **Backing Up Important Files:**
 - Use external hard drives, USB drives, or cloud services like Dropbox, OneDrive, or iCloud.
 - Regularly review and update the backup strategy based on evolving needs.
- **Running an Antivirus Scan:**
 - Schedule regular scans to detect and remove potential threats automatically.
 - Perform manual scans after downloading new files or visiting unfamiliar websites.

Key Inquiry Questions

7. Importance of Fire Safety:

- **Protect Lives and Property:**
 - By preventing injuries, fatalities, and damage to structures.

- **Avoid Disruptions in Work Environments:**
 - Ensuring uninterrupted workflow and maintaining productivity.
- **Prevent Injuries and Ensure a Safe Working Atmosphere:**
 - Fostering a secure and comfortable workplace for all individuals.

Strand 1.0: Foundations of Pre-Technical Studies

Sub Strand 1.2: Computer Hardware (11 lessons)

Lesson 1: Introduction to Computer Hardware

- **Computer Hardware:**
 - Physical parts of a computer system, including tangible components that can be touched and seen.

Explanation: Computer hardware comprises the physical elements that make up a computer, allowing it to function. These components include devices such as keyboards, monitors, hard drives, and more.

Lesson 2: Categories of Computer Hardware

- **Input Devices:**
 - Keying devices (e.g., keyboards).
 - Pointing devices (e.g., mice, trackpads).
 - Scanning devices (e.g., scanners).
 - Voice input devices (e.g., microphones).
 - Touchscreen and digitizer.
 - Digital cameras.

- **Output Devices:**
 - Hardcopy (e.g., printers).
 - Softcopy (e.g., monitors, speakers).

- **Storage Devices:**
 - Fixed (e.g., hard disk drives, SSDs).
 - Removable (e.g., USB drives, external hard drives).

Input devices get data, output devices display information, and storage devices save data.

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