Foundation Programme in Literacy, Numeracy and Skills

DIGITAL LITERACY

Teacher's Guide: GRADE 7 - Lesson 3

Components of a computer system

Core Competency:
Use the computer system to perform various tasks.

Element:
Describe the major components of a computer system and their functions.

Performance criteria:
- Describe the major components of a computer system (Internal Components).

Purpose of activity:
To help students recognise and understand the function of each component in a computer system.

Learning outcomes:
By the end of this lesson, students should be able to:
- Describe the functions of each component
- Match components to their functions

Resources and materials:
- Real or dummy computer parts
- Cards (for a quiz)
- Projector or interactive screen (Interactive Flat Panel Display) - Optional
- Pictures or posters of computer components

Implementation guidelines:

1. Describe the main components.
    - Central Processing Unit (CPU)
        - Often referred to as the 'brain' of the computer.
        - Executes instructions and processes data.
        - It includes arithmetic and logic unit (ALU) and control unit (CU).
    - Memory (ROM / RAM)

- Random Access Memory (RAM).
  - Temporary storage for data and instructions currently in use.
  - Volatile memory; data is lost when power is off.
  - Allows quick access to data.
- Read Only Memory (ROM)
  - Permanent storage for essential system instructions, like boot-up process.
- Storage devices
  - Used for long-term data storage.
  - Examples: Hard Disk Drive (HDD), Solid State Drives (SSD) and external storage like USB drives.
- Input devices
  - Allow users to interact with the computer.
  - Examples: mouse, keyboard, scanner, microphone.
- Output devices
  - Display or output data processed by the computer.
  - Examples: monitor, printer, speaker, projector.
- Motherboard
  - The main circuit board that connects all components.
  - Connects the CPU, memory, power supply, storage, and other essential components.
  - It allows communication between the components.
- Power supply
  - Convert electrical power from an outlet into a usable form for internal components.
- Graphics Processing Unit (GPU)
  - Handles rendering images, videos, and animations.
  - Necessary for gaming, video editing, graphics, and design work.
- Network Interface Card (NIC)
  - Allows computers to connect to wired or wireless networks.
- Cooling system
  - Prevents components like CPU and the GPU from overheating.
  - Includes fans and heat sink.
  - It ensures efficient performance.

2. Class discussion on how these components work together.

Assessment:

- Activity 1: Match the different parts to their functions.
- Activity 2: Quiz (The steps to carry out the quiz are provided below)

Steps:

1. Divide students into groups of 4 to 6, ensuring each group has mixed-ability students.
2. Ask each group a question in turn.
3. Set a wait time of 30 seconds for the group to answer.
4. Award 10 points to a group for a correct answer.
5. If the intended group cannot answer correctly, the question is directed to other groups. The first group to raise a hand may answer.
    a. If correct, award 5 points to the answering group.
    b. The wait time for this response is 15 seconds.
6. Declare the winning group – the group with the highest score at the end.
7. The teacher should brief students on the rules and expectations before starting.
8. Monitor the quiz to ensure engagement, fairness, and smooth execution.
9. Encourage students to discuss and reflect on their answers after the quiz.
10. Review and provide feedback.
    a. Offer constructive feedback to reinforce learning.
    b. Recognise and encourage students with incentives or praise for participation.

Note: The teacher may use the following quiz questions, but they are not exhaustive, as teachers can also prepare their own questions.

Extension of activity:

- Show students the components in a computer lab.
- Allow students to interact with the internal components in the lab (unused or faulty components that have been kept for demonstration purposes only).