

03

DIGITAL LITERACY • GRADE 8

Hardware

Open the case. Every physical part of a computer does one of four jobs — and once you know which, you can identify a component you have never seen before.

Module 3 of 3 • Estimated study time: 4 hours • Ends with a knowledge check

What you will be able to do

Four things you should be able to do without notes by the end of the module.

1 Sort any component

Place any piece of hardware into input, processing, storage or output and defend the choice.

2 Explain RAM vs storage

Explain why a computer needs both, and what happens when each one runs short.

3 Compare storage

Compare hard drives, solid-state drives, flash and cloud storage on speed, cost and durability.

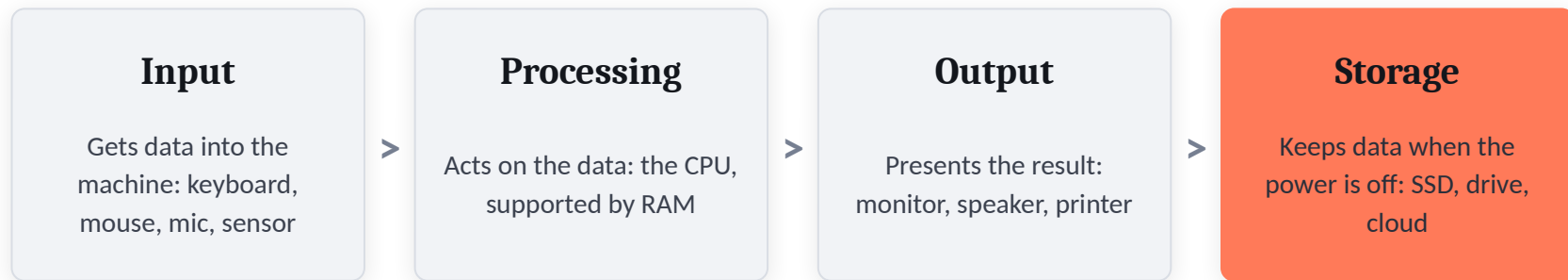
4 Read a spec sheet

Read a device advert and say what the processor, RAM and storage figures actually mean.

CORE CONCEPT

Every component does one of four jobs

This is the same cycle from Module 1 — now applied to the parts you can hold.



The question that classifies anything

Ask which direction the data moves. Into the machine is input, out of it is output, held for later is storage, changed along the way is processing.

Some devices do two jobs: a touchscreen is input and output, a network card sends and receives.

Getting data in

Keyboard

Still the fastest way to enter text accurately. Learn to touch-type and it stays that way.

Pointing devices

Mouse, trackpad, stylus, touchscreen — they turn hand movement into position data.

Scanners & readers

Flatbed scanners, barcode readers and card readers turn physical things into files.

Cameras

Webcams and phone cameras capture light as image data; QR scanning is a camera plus software.

Microphones

Capture sound for calls, recordings and voice control.

Sensors

Fingerprint, GPS, accelerometer, temperature — input nobody consciously enters.

Getting results out

Monitors

The main output device. Size in inches, sharpness in resolution — 1920×1080 is standard.

Projectors

A monitor for a room. Brightness matters more than resolution in a lit classroom.

Printers

Hardcopy. Inkjet for photos and colour, laser for volume and crisp text.

Speakers

Audio output for media, alerts and accessibility tools like screen readers.

Headsets

Private audio output, usually paired with a microphone as an input device.

Actuators

Output that moves something: a printer motor, a vibration, a robot arm.

The processor and its workbench

GHz

clock speed — how many billion basic operations the CPU handles each second

Cores

independent workers on one chip — four cores handle four tasks at once

GB

RAM capacity — how much work can stay open at the same time

RAM — the desk surface

Fast, temporary and volatile. Everything you have open sits here. Cut the power and it is gone instantly. Run short of it and the machine crawls.

Storage — the drawers

Slower, permanent and much larger. Files, programs and the operating system live here and survive being switched off.

STORAGE

Where files actually live

Capacity climbs in steps of roughly a thousand: KB → MB → GB → TB.

Hard drive (HDD)

Spinning magnetic disks. Cheap per gigabyte, large, but slower and easily damaged by a knock.

Solid-state (SSD)

No moving parts. Much faster and tougher, costs more per gigabyte. Standard in new laptops.

Flash memory

USB sticks and memory cards. Portable and convenient — and the easiest thing in the world to lose.

Optical discs

CDs and DVDs. Nearly obsolete: low capacity, and few new machines have a drive.

Cloud storage

Files kept on someone else's servers, reachable anywhere — as long as you have a connection.

Backups

A second copy in a different place. Not optional: drives fail without warning.

A photo is a few MB. A film is a few GB. A laptop drive is usually 256 GB to 1 TB.

CONNECTIONS

What holds it all together

The motherboard is the board every other component plugs into so they can exchange data.

1

Motherboard

The main circuit board. Carries the CPU, RAM and the connections between everything.

2

Power supply

Converts mains electricity into the low voltages the components need.

3

USB ports

The general-purpose connector: keyboards, drives, phones, charging.

4

HDMI

Carries high-definition video and audio to a monitor or projector on one cable.

5

Network

Ethernet port or wireless card — how the machine reaches other computers.

If a device is not recognised, the fault is usually the driver — software — and not the port.

PRACTICAL

Looking after the equipment

Most school hardware dies of neglect long before it becomes obsolete.

1 Keep it cool and clean

Blocked vents cook a machine slowly. Keep air paths clear and the keyboard free of crumbs.

2 Shut down properly

Pulling the power mid-write is how files and drives get corrupted.

3 Handle cables and ports gently

Pull the plug, never the wire, and never force a connector the wrong way round.

4 Dispose of it responsibly

Old devices go to an e-waste collection point. Wipe your data before they leave your hands.

Never put electronics in a household bin — batteries and circuit boards contain material that leaches into groundwater.

PRACTICE ACTIVITY

Buy a computer for R12 000

Your task

A Grade 8 learner needs a computer for schoolwork, research and light photo editing, with a budget of R12 000. Find three real machines currently on sale and recommend one.

1 Compare

Build a table: processor, cores, RAM, storage type and size, screen, price.

2 Translate

Say in plain words what each figure means for this learner's daily work.

3 Recommend

Pick one, justify it in five sentences, and name the trade-off you accepted.

Marks: 25 · Due at the end of Week 8 · Work individually

Submit as a one-page recommendation in the assignment upload for Module 3.

KNOWLEDGE CHECK

Before you take the quiz

Answer these three out loud. If any of them stalls you, go back to that slide.

1

Your computer switches off during a power cut and your unsaved essay disappears, but the file you saved this morning is fine. Explain both outcomes.

2

A touchscreen is often given as an exam trick question. Which two categories does it belong to, and why?

3

Two laptops cost the same: one has a faster processor with a hard drive, the other a slower processor with an SSD. Which would feel quicker in daily use, and why?

The full quiz has ten questions and gives you feedback after each answer.

MODULE 3 COMPLETE

What to take with you

Four jobs

input, processing, storage, output — every component fits, some fit twice.

RAM vs storage

RAM is the fast temporary desk, storage is the permanent drawer.

Storage choices

trade speed against cost against portability — and always keep a backup.

Spec sheets

GHz, cores and GB describe how fast, how many at once, and how much.

End of course • Modules 01–03 complete