

01

DIGITAL LITERACY • GRADE 8

Introduction to Computers

What a computer actually is, how it turns raw data into useful information, and where you already meet computers every day without noticing them.

Module 1 of 3 • Estimated study time: 3 hours • Ends with a knowledge check

MODULE 1

What you will be able to do

By the end of this module you should be able to complete each of these without help.

1 Define a computer

Explain in your own words what makes a device a computer, and give three examples that are not laptops.

2 Describe the cycle

Describe the four stages of the information processing cycle and give an example of each.

3 Separate data and information

Explain the difference between data and information using an example from your own school day.

4 Identify the five parts

Name the five parts of a computer system and explain why people and procedures count as parts.

These four objectives are what the end-of-module quiz measures.

DEFINITION

So what is a computer?

A computer is...

an electronic device that accepts data, follows a set of stored instructions to process it, produces a result, and can store that result for later.

The four words that matter

- Electronic — runs on power and circuits
- Stored instructions — the program can change
- Processes — it acts on the data
- Storage — the result survives

Programmable

You can change what it does by loading different software.

Accurate

It repeats the same operation millions of times without drifting.

Fast

A modern chip performs billions of simple operations each second.

Reliable

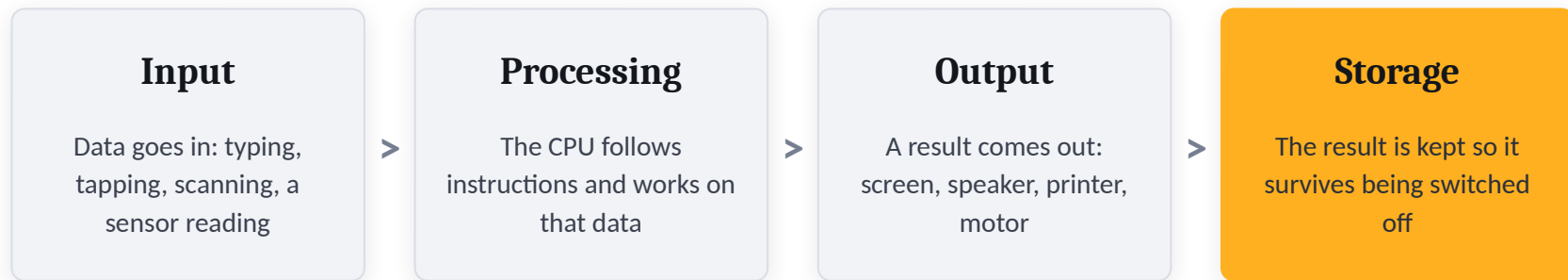
It does exactly what it is told — including the wrong thing.

A calculator follows instructions but cannot store a program, so it is not a computer.

CORE CONCEPT

The information processing cycle

Every computer, from a smartwatch to a weather supercomputer, repeats these four stages.



Why storage is listed separately

Without storage the cycle still works, but nothing survives a power cut. That is the difference between a pocket calculator and a computer.

Worked example: you type a mark (input) → the spreadsheet averages the class (processing) → the average appears on screen (output) → the file is saved to the school server (storage).

Data is not information

Data

Raw, unorganised facts. On their own they carry no meaning.

18 21 19 34 17 20

Information

Data that has been processed, organised and given context, so it can be used to decide something.

"Average class age: 21.5 years"

1

Collect

Gather the raw facts from a form, a sensor or a survey.

2

Process

Sort, count, average, filter — do something to the numbers.

3

Present

Show it as a sentence, a chart or a table someone can read.

4

Decide

Use it to act: who to contact, what to change, what to buy.

A computer system has five parts

Take away any one of them and the system stops being useful.

1

Hardware

The physical parts you can touch: screen, keyboard, chips, cables.

2

Software

The instructions that tell the hardware what to do.

3

Data

The facts that go in and the information that comes out.

4

People

The users, and the technicians who keep it running.

5

Procedures

The rules: how to log in, back up, and report a fault.

Most people name only the first two — that is why so many "computer problems" are really people-and-procedure problems.

CLASSIFICATION

Not all computers look like computers

Embedded

Built into another device and does one job: a microwave timer, a car braking system, a smart meter.

Mobile

Phones, tablets and smartwatches.
Touch input, battery powered, always connected.

Personal

Desktops and laptops. General purpose — you choose what software to run.

Server

Runs constantly and serves many users at once: the school network, a website, a game world.

Mainframe

Handles enormous volumes of transactions reliably — banks, airlines, tax systems.

Supercomputer

Thousands of processors on one problem: climate models, vaccine research.

Sorted roughly by processing power, from the smallest to the largest.

CONTEXT

Where you already meet computers

30+

computers a typical learner
interacts with in a single school
day

50–150

separate computers inside one
modern car

24/7

the school server keeps running
while nobody is watching it

At school

Attendance registers, the library
catalogue, the projector, your marks.

At home

Streaming, banking apps, the geyser
timer, a smart TV, load-shedding
schedules.

In town

Traffic lights, till points, fuel pumps,
the ATM, security cameras.

Count the computers you personally used before arriving at school this morning.

Working safely at a computer

Bad habits build up quietly over years of screen time. These four fix most of it.

1 Screen at eye level

The top of the screen should sit level with your eyes, about an arm's length away, so your neck stays neutral.

2 Feet flat, back supported

Both feet on the floor, lower back against the chair, elbows at roughly a right angle.

3 Break the stare

Blink deliberately and look into the distance regularly — screens cut your blink rate by half.

4 Protect the equipment

No food or drink near the keyboard, shut down properly, and never yank a cable out by the wire.

PRACTICE ACTIVITY

The thirty-computer hunt

Your task

Walk through one ordinary day and list ten devices you believe contain a computer. For each one, name the input, the processing, the output and whether anything is stored.

1 Find them

Ten devices, none of which may be a laptop, desktop or phone.

2 Break each down

Fill in all four stages of the cycle for every device.

3 Defend one

Pick the device you are least sure about and argue your case in three sentences.

Marks: 15 · Due at the end of Week 3 · Work individually

Submit as a table in the assignment upload for Module 1.

KNOWLEDGE CHECK

Before you take the quiz

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

1 Why is a basic pocket calculator not classed as a computer, even though it processes numbers?

2 Your friend says "I collected lots of information in my survey." What have they actually collected, and what would turn it into information?

3 A school buys 200 new tablets and nothing improves. Which two parts of the computer system were probably ignored?

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

MODULE 1 COMPLETE

What to take with you

A computer

accepts data, follows stored instructions, produces output and stores the result.

The cycle

input, processing, output, storage — it holds for every computing device.

Data vs information

raw facts become information only once they are processed and given context.

A system

is hardware, software, data, people and procedures — not just the box.

Next up • Module 02: Software