

What is a computer?

Printable handout — the definition, the difference between data and information, and the five parts of a computer system.

Before you start

Most people picture a laptop when they hear the word “computer”. By the end of this topic you will have counted about thirty computers you used before breakfast, and not one of them was a laptop. That is the job of this lesson: to replace a picture with a definition you can defend.

Objectives

- 1. Define a computer in your own words and give three examples that are not laptops.
- 2. Explain the difference between data and information using an example from your own day.
- 3. Name the five parts of a computer system and explain why people and procedures count.

1 · The definition

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.

Every part of that sentence does work. *Accepts data* — something has to go in. *Follows stored instructions* — the critical phrase, and where most devices fail the test. *Produces a result* — something comes out. *Can store that result* — it survives being switched off.

Quality	What it means
Programmable	You can change what it does by loading different software. This is the dividing line.
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. Reliable does not mean correct.

The calculator test. A pocket calculator accepts data, processes it and produces output. But you cannot load a different program into it: the instructions are wired in. It fails on *stored instructions*, so it is not a computer.

2 · Data is not information

What it is	Example
------------	---------

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 that it can be used to decide something.	"Average class age: 21.5 years"

The journey from one to the other has four steps:

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. This step is a human one, and it is the whole point.

Rule of thumb. Data answers "what was recorded?". Information answers "so what?".

3 · A computer system has five parts

Take away any one of them and the system stops being useful. Most people name only the first two — which is why so many "computer problems" are really people-and-procedure problems.

Part	What it covers
Hardware	The physical parts you can touch: screen, keyboard, chips, cables.
Software	The instructions that tell the hardware what to do.
Data	The facts that go in, and the information that comes out.
People	The users, and the technicians who keep it running.
Procedures	The rules: how to log in, how to back up, how to report a fault.

The exam scenario. A school buys 200 tablets and nothing improves. The hardware is new and the software is fine. What was ignored? Nobody trained the *people* and nobody wrote the *procedures*. That is a system failure, not a computer failure.

4 · Check yourself

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?
4. Give three examples of computers that are not laptops, desktops or phones.
5. "Reliable does not mean correct." Explain what that means for a computer.

Activities for this lesson

Activity 1 — The definition defence. Write a one-sentence definition of a computer. Then name one device you are *not* sure about and argue both sides in three sentences. Post it in the Discussion forum and reply to one classmate.

Activity 2 — From data to information. Collect one real set of raw figures from the school day. Process them into one sentence of information, and state what decision that sentence would support.

Neither activity carries marks. The marks for this topic are in the Checkpoint, which assesses Lessons 1–3 together.

Glossary

Data	Raw, unorganised facts with no context.
Information	Data that has been processed and given context so it can support a decision.
Programmable	Able to run different stored instructions, so the same device can do different jobs.
Procedures	The written rules for using a system: logging in, backing up, reporting faults.
Storage	Keeping a result so that it survives the machine being switched off.