

Types of computers and features

Printable handout — six categories that cover every computing device on earth, and the five features you compare them on.

Why the features matter more than the names

Anybody can put a device in a box. The Checkpoint asks you to *defend* the choice, which means naming the feature that put it there. So do not learn the six categories as a list to recite — learn the questions that separate them, because those work on a device you have never seen.

Objectives

1. Classify any device as embedded, mobile, personal, server, mainframe or supercomputer.
2. Justify a classification by purpose, processing power and number of simultaneous users.
3. Compare the features of three device types in a table.

1 · Six categories

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

Type	What it is	Real examples
Embedded	Built into another device and does one job for its whole life. The category people forget, and by far the most common.	Microwave timer, car braking system, smart electricity meter
Mobile	Touch input, battery powered, always connected.	Phone, tablet, smartwatch
Personal	General purpose — you choose what software to run.	Desktop, laptop
Server	Runs constantly and serves many users at once.	School network, a website, a game world
Mainframe	Handles enormous volumes of transactions reliably.	Banks, airlines, tax systems
Supercomputer	Thousands of processors thrown at a single problem.	Climate models, vaccine research

2 · The five features that separate them

These are the columns of the table you are about to build — and the reasons you give when you defend a classification.

Feature	The question it answers
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Purpose	One fixed job, or many jobs you choose? Embedded devices do one thing forever; a laptop does whatever you install.
Processing power	How much work per second. The scale is not gentle: a smart meter, a phone and a supercomputer are thousands of times apart, not a few.
Users at once	One person, or thousands? This single question separates personal computers from servers and mainframes faster than anything else.
Portability	Carried in a pocket, moved between rooms, or bolted into a cooled room it never leaves.
Cost and ownership	Bought by a person, a school or a national institution — and who maintains it.

The habit that earns marks. Whenever you classify a device, name the feature that decided it. “It feels like a server” earns nothing. “It serves 400 users at once, so it is a server” earns the mark.

Worked example — a supermarket till point. Purpose: one fixed job. Users: one at a time. Portability: bolted to a counter. Processing power: modest. It is *embedded*, and you can defend it.

3 · Where you already meet computers

Number	What it counts
30+	Computers a typical learner interacts with in a single school day
50-150	Separate computers inside one modern car: engine management, anti-lock brakes, airbags, windows, the screen
24/7	The school server, running while nobody is watching it

At school: attendance registers, the library catalogue, the projector, your marks — most of them you never think of as computers at all. **At home and in town:** streaming, banking apps, the geyser timer, a smart TV, load-shedding schedules, traffic lights, till points, fuel pumps, the ATM, security cameras.

Between waking up and sitting down in class, how many computers did you use? Most learners reach fifteen before realising they are nowhere near finished. That count is the Checkpoint marked task, so start noticing now.

4 · Check yourself

1. A smart electricity meter runs the same program for its whole life. Which category, and which feature decided it?
2. What single question most reliably separates a personal computer from a server?
3. Is a smart TV a computer? Argue it from the definition in Lesson 1, then classify it.
4. Name two devices that could reasonably be placed in two categories at once.

5. Why is “embedded” the category people forget?

Activities for this lesson

Activity 1 — Six types, six features. Build a comparison table with one row per type: purpose, processing power, typical number of users, portability, and one real example each. Build it properly and keep it — it is the most useful page you will have during the Checkpoint.

Activity 2 — The odd one out. You are given five devices. Classify each, then identify the one that belongs to two categories at once and explain why. A written answer, not multiple choice.

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

Glossary

Embedded computer	A computer built into another device to do one fixed job.
Server	A computer that runs continuously and serves many users at once.
Mainframe	A large computer built to process enormous volumes of transactions reliably.
Supercomputer	Thousands of processors working together on a single problem.
Portability	How easily a device can be moved — one of the five classifying features.

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