FREE ACTIVITY SHEET · AGES 8–12

How Computers Work

Find out what the main parts of a computer do and how they work together.

Name _____

Date _____

1 The Four Jobs

Every computer does four jobs. Write **I**, **P**, **O**, or **S** in the box next to each part.

I = Input → **P = Processing** → **O = Output** + **S = Storage**

- ☐ Keyboard
- ☐ CPU
- ☐ Microphone
- ☐ Game controller
- ☐ Screen
- ☐ Solid-state drive (SSD)
- ☐ Speakers
- ☐ Printer

2 Desk or Bookshelf?

RAM is like a desk: it holds what you are working on right now. **Storage** is like a bookshelf: it keeps things for later. Circle the right one for each clue.

1.	Holds the apps that are open right now	DESK BOOKSHELF
2.	Keeps your photos when the power is off	DESK BOOKSHELF
3.	Is cleared when the computer is switched off	DESK BOOKSHELF
4.	Is slower, but holds much more	DESK BOOKSHELF
5.	Is very fast, so the CPU does not have to wait	DESK BOOKSHELF
6.	Is where a saved story lives	DESK BOOKSHELF

3 Why Is It Slow?

Draw a line from each problem to what is happening inside the computer.

1. Too many apps are open	**A.** The CPU is busy, so other work has to wait.
2. A demanding task is running	**B.** It slows itself down on purpose to protect its parts.
3. Storage is almost full	**C.** RAM fills up, so things keep moving in and out of it.
4. The computer is very hot	**D.** There is little room left for the computer to work with.

Good to know: Inside a computer, all information is stored as **bits**. A bit can only be 0 or 1. Letters, numbers, pictures, and sounds are all long patterns of bits.

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4 Maya Writes a Story

These six steps are mixed up. Number them from **1** to **6** in the order they happen.

- ☐ **A.** Maya saves her work. The story is copied from RAM to storage as a file.
- ☐ **B.** She presses the M key. The keyboard sends a signal.
- ☐ **C.** She opens the writing app. The operating system copies it from storage into RAM.
- ☐ **D.** The screen updates. Tiny dots called pixels change so the letter M appears.
- ☐ **E.** She closes the app. The space it used in RAM is freed.
- ☐ **F.** The CPU follows the app's instructions and adds the letter to the story in RAM.

5 True or False?

Circle TRUE or FALSE.

1.	The CPU thinks the way a human brain does.	TRUE	FALSE
2.	Everything in RAM is cleared when the computer is switched off.	TRUE	FALSE
3.	A touchscreen is both an input device and an output device.	TRUE	FALSE
4.	Apps talk to the hardware directly, without the operating system.	TRUE	FALSE
5.	A bit can only be 0 or 1.	TRUE	FALSE

6 In Your Own Words

Why can work you have not saved be lost if the battery runs out?

Answers for grown-ups. 1: Keyboard I, Screen O, CPU P, SSD S, Microphone I, Speakers O, Game controller I, Printer O. **2:** 1 Desk, 2 Bookshelf, 3 Desk, 4 Bookshelf, 5 Desk, 6 Bookshelf. **3:** 1 C, 2 A, 3 D, 4 B. **4:** A 5, B 2, C 1, D 4, E 6, F 3. **5:** 1 False (it follows very simple instructions, very quickly), 2 True, 3 True, 4 False (apps ask the operating system), 5 True. **6:** Unsaved work is only in RAM, and RAM does not keep its contents without power.

KEEP LEARNING

Goes with the book **How Computers Work for Kids Ages 8–12** by Laith Sad.

How the Internet Works for Kids Ages 8–12 **amazon.com/dp/B0HLH86YQ3**
How Computers Work for Kids Ages 8–12 **amazon.com/dp/B0HLYSJ1QX**
How Artificial Intelligence Works for Kids Ages 8–12 **amazon.com/dp/B0HM3R4D29**

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