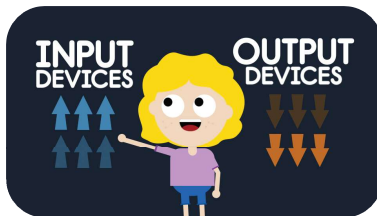# Hardware Software

Info Sheet

WHAT ARE HARDWARE AND SOFTWARE?

Computers are all around us. So much so that we might not have considered what goes into them to make them work! So what exactly makes up a computer? Generally speaking it's two things, hardware and software. Hardware is the 'body' - the stuff we can see and feel. Software is the 'mind' of a computer and is held within the hardware. Software is made of computer 'programs' and these programs are created by coding!
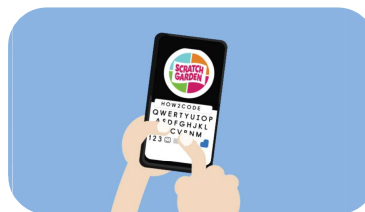
THE HARDWARE SOFTWARE VIDEO

The purpose of the video is to introduce the two main components of any computer.

The video gives many examples of hardware then further breaks them down into input and output devices.

The video actually can't show what software is, because - and this is an important point - software is essentially invisible! Software is the instructions (made by coding) that tell the hardware what to do.

Later, we learn that more contemporary devices like smartphones and tablets are both input and output devices.

TAKE AWAYS:

- Computers need both hardware and software to work.
- Hardware can be divided further into input and output devices.
- We can touch and see hardware; we cannot touch or see software!

Activities

Minds On: Scavenger Hunt

This activity will have learners better understand and identify the difference between hardware and software.

Learners will begin by searching for various examples of hardware and software, either in their school or within their own home. As they search, have them record anything they believe to be hardware or software, using a format of their choice. As they record various items, remind learners to include the item's name and whether they believe it to be software or hardware. Once all items have been recorded, put them into either the category of hardware or software. Remind learners that some items can be both and might have to be added to both categories!

Action:

Using the previously created list of hardware and software, have learners think about what each of these items are used for. Have learners add a short description to each item, explaining what each piece of hardware and software does.

Ask learners "Do all software have the same features? What about hardware? If they do different things, why are they still considered hardware or software?
"How would you describe the difference between hardware and software to someone who has never heard these terms before?"

Consolidation

Using the list of hardware, have learners further categorize these items by sorting them into either 'input' or 'output'. Remind learners (or replay the video if they need a refresher) that input makes things go in the computer and output makes things come out. Once each piece of hardware is categorized into either input, output, or both, confirm they are correct before moving to the next step.

Now they're going to put it all together! Learners will be tasked to create an example that includes both input and output hardware and software, then explain how they are used together to make something happen. For example, a keyboard (input hardware) is used to type into a word document (software) which can be printed on a printer (output).

Song Lyrics

Hardware software over where? Hardware software everywhere!
Hardware software over there? Hardware software underwear!

Hardware is the stuff that you can see and feel
But please don't eat it, it's not a meal
This screen, this keyboard, and cords for power
These speakers and this printer, but not this flower
Software is actually something you can't see
It's inside the hardware, don't believe me?
It's the instructions that tell the computer what to do
We call this coding, and YOU can do it too!
Hardware and software, they need each other
like I need pizza and a baby bird needs a mother
Actually you can't have one without the other
They're like a family, like a sister and a brother
You want an example? OK, let's take this screen
It uses both to work, you'll see what I mean
The screen is the hardware, yeah this you already know
BUT the software inside tells the screen to turn on and glow
Then it will tell it what to show
Like some words, an image, or this video
But without any software, I'm gonna be frank:
If you didn't have no software, the screen would just be blank

Chorus

Let's divide up the hardware some more, make some slices!
Into ONE: input and TWO: output devices!
One makes things go in the computer and the other things come out
You'll understand this, I have no doubt
With a keyboard you type words, and this is input
A printer can print those words, and this is output
With a mic you can sing and this is input
A speaker makes sounds and this is output
And with a screen, yeah especially these days
Well things with a screen can actually go both ways!
Some screens you can output stuff with your fingers
You can click and swipe or type stuff with fingers
But a screen you know, we talked about this before
Can output colors and pictures, and videos and more!

Chorus