

## Standard: CS.HS.01 Grade: 2

### Standard 2.CS.HS.01

Identify internal and external **components** of a **computer system** and their basic functions (e.g., **hard drive** and memory) as well as peripherals (e.g., printers, scanners, external hard drives) and external storage features and their uses (e.g., **cloud storage**).

### Essential Skills

Explain the role of the **CPU**, **memory**, and **hard drive** of **computing devices**.

Differentiate among the **hard drive** of a computer, an external hard drive, and **cloud storage** as appropriate.

### Essential Questions

What are the names of the external and internal parts of a computing device and what do those parts do?

Which parts of the computer are considered **input** devices?

What parts of the computer are considered **output** devices?

### Explanation

A computing system is composed of **hardware** and **software**. Hardware consists of physical components that are both internal to and external from the computer. Students should recognize and use appropriate terminology for external hardware and devices such as laptop computers, monitors, keyboards, mice, trackpads, and printers as well as for internal components such as **CPU**, **hard drive**, and **memory**. By first grade students should be able to describe the functions of some of the components. By second grade, students should describe functions of most components as well as of external storage devices such as external hard drives and **cloud storage** (such as Google Drive). This content should be made relevant to the hardware and software available to the students.

### Think of this as similar to....

Eyes, ears, skin, nose are **input** devices (external hardware) and the brain is what interprets that input and decides how to react. When you speak or move that is **output**.

## Implementation Examples—What would this look like in the classroom?

Title	Description	Link	Content Connection & Notes
<b>Tech File Storage</b>	<b>Grade 2</b> --For a given writing assignment, students demonstrate that they understand how to store their files for different purposes including for use on the computer where they created them, for use at home, for collaboration with another student, to receive feedback from adults, and to share it with the whole class.		This lesson aligns with, <b>ELA.2.W.2</b> , and <b>2.W.6, DL 6.b.</b> ; it could also be used with <b>NGSS 2.PS1-4</b> and/or other subject area standards
<b>Simulating an iPad</b>	<b>Grade 2</b> -- Students role play the parts of an iPad (buttons, application, processor, etc.) and act out how the parts interact when an alarm app or calculator app runs. This is designed to be implemented as an unplugged activity and can be adapted to simulate a different computing device.	<a href="#">Simulating an iPad</a>	
<b>That Could be a Computer</b>	<b>Grade 2</b> --Students reimagine the capabilities of common objects if they were computers, for example a backpack could scan for homework, lunch, water bottle and provide a warning if something is missing. Students specify the parts of their imagined devices, such as what the input is (items in the backpack), what the processor does (decide if there is homework, lunch, water bottle), and what the output is (a warning if something is missing). The students can also identify what information has to be stored in memory (what a water bottle looks like for the long term, if there is a water bottle for the short term).	<a href="#">That Could be a Computer</a>	

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These annotations are a collaboration between [Maryland Center for Computing Education](#) and the [Maryland State Department of Education](#).