

Lesson 1 Computers All-Around

How do we interact with hardware and software in our daily lives?

Overview

This lesson gets students thinking about the ways computer hardware and software affect our daily lives.

Objectives

Students will be able to...

- explain why computers are important.
- identify software and hardware.
- distinguish between computer software and computer hardware.

Suggested Duration

45 minutes

Blueprint Foundations Student Outcomes

I can explain how an application impacts my family or my community.

Vocabulary

computer - an electronic device that accepts data or information from input devices, processes the data to produce information on output devices, and can store the results in short term or long term storage.

hardware - are all the parts of the computer that you can physically touch such as the monitor, keyboard, mouse, and computer casing.

software - is a set of instructions that tells hardware what to do (ie. how to carry out specific tasks).

Planning Notes

Tech Requirements

- Instructor: You will need a computer with internet access and the ability to display to the class via smartboard or projector.

Prepare Online Resources

- Open the [Computer Science Basics: Hardware and Software video](#) and prepare to run it with the class. If necessary, change the speed to make it a little easier to understand and/or use the captions
- Test video links to ensure they are playable in class:
 - YouTube is blocked in some schools. If necessary, download the video in advance from the alternate link.
- Download [image](#) for the warm-up activity

Prepare Materials

- Print the [Hardware & Software](#) handout
- Ensure that students have Computer Science Journals ready:
 - [Printable version](#), or use any notebooks that the instructor prefers

Resources

Video

- [Computer Science Basics: Hardware and Software video](#)

Handout

- [Hardware & Software](#)

Computer Science Journal

- [Printable version](#), or use any notebooks that the instructor prefers

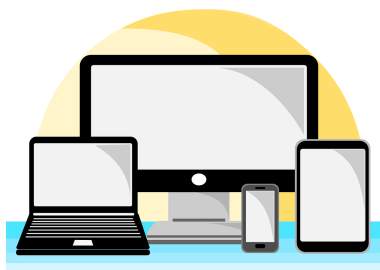
Slide Deck

- [Types of computers](#)

Assessments

- [Hardware & Software](#)

Do Now/ Warm-up



Display this [image](#) on the board.

Say

Computers come in different shapes and sizes, from tiny cellphones to large desktop computers.

1. In your journal, write 2 types of computers that you use often.
2. What do you use these computers for?

Have students think-pair-share before asking for volunteers to share the answers.

Ask

If your parents deleted every single app on your phone, would your phone still be useful? Explain why or why not. Explore how students' lives would be different without computers.

Lesson procedure

Class Discussion

1. As we just discussed, phones wouldn't be as much fun without apps. Apps are a type of software. Our cell phones are a type of hardware. Software and hardware rely on each other.
2. We are going to watch a video on hardware and software. As you watch it, jot down some notes of things you discovered.
3. Play the video: [Computer Science Basics: Hardware and Software video](#) (approximately 2 minutes). Have students jot down notes on the Hardware & Software handout. Give time to share out.
4. Play the video again, but have students focus on (refer to the worksheet for specifics):
 - a. Hardware
 - b. Software
 - c. Why they need each other
5. Review their responses to the questions on the handout.
6. If there is no **hardware**, would the **software** be able to run?

Independent Work

1. Independently, have students complete the 2nd page of the handout.
2. Have students share what they drew for the last question

Wrap-Up

Journal Prompts

1. Identify a computer hardware device that you have at home.
 2. Describe the software that you use on that computer. (Provide an example)
 3. Describe the relationship between hardware and software. How does one require the other?
- (Students could also draw their responses)

Extensions

Students can draw and/or write about the "perfect" computer.

Alternate assessment: [Cloze activity](#)

Have students write a fantasy article: Imagine your life without a computer.

Differentiation/Accommodations/Alternate Resources

[Personal Computer Pros and Cons Worksheet](#)

(Students can list the pros and cons of different types of computers)