

Computing Systems Troubleshooting

K-2.CS.3 Describe basic hardware and software problems using accurate terminology.

3-5.CS.3 Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.

Defining Problem Solving Skills

Solving problems is the core of computer science. Programmers must first understand how a human solves a problem, then understand how to translate this "algorithm" into something a computer can do, and finally how to "write" the specific syntax (required by a computer) to get the job done.

What is Problem Solving?

Specifically, digital problem solving involves the use of the skills, strategies, and approaches (including mindsets) needed to navigate online in everyday contexts, including the library, and use novel resources, tools, and interfaces in efficient and flexible ways to accomplish personal and professional goals.

What are the 7 steps to problem solving in computer?

1. STEP 1: The Right Problem to Solve. ...
2. STEP 2: Analyse the Problem. ...
3. STEP 3: Define the Problem. ...
4. STEP 4: Develop Opportunities (Possible Solutions) ...
5. STEP 5: Select the Best Solution. ...
6. STEP 6: Implement the Solution. ...
7. STEP 7: Evaluate and Learn.

Algorithm

An algorithm is a set of step-by-step procedures, or a set of rules to follow, for completing a specific task or solving a particular problem.

Troubleshooting: Definition

Troubleshooting is the process of identifying and solving technical problems. It starts with general issues and then gets more specific.

Hardware is any physical device that you use to operate your computer. The guts of the computer are the CPU and RAM (random access memory), but outside parts like your monitor count, too.

Software is computer coding that's placed on your computer's hard drive such as Google Docs. Software applications are virtual and trickier to troubleshoot.

Connectivity allows devices to talk to one another and share information.

Hardware Problems

- Reboot - power cycling your computer is one of the best and easiest ways to troubleshoot. It tends to just reset everything and hopefully get rid of whatever glitch is causing issues.
- Unplug peripheral devices - remove any tool that's connected to a computer like an extra drive, or a scanner.
- Check your cables and power cords to make sure they are connected properly.
- Memory - do you have enough memory? Various files and applications can quickly overtake your memory.
- Check printer - make sure you send a document to the correct printer and look for printer jams. Check that the printer has paper and ink.

Software Problems

- Make sure the software is installed correctly. Like in hardware, restarting the program might just fix the glitch. Trying switching browsers such as using Google Chrome instead of Firefox or Microsoft Edge.
- Make sure your software is updated.
- Sometimes you might encounter a problem you can't fix. To prevent permanent loss, make sure you back up your data.
- Microsoft have a list of frequently asked questions (FAQs) and tips. Save your instructions and manuals—these are a great reference for your troubleshooting questions.