

## Standard: CS.T.01 Grade Band: 3-5

Grade	Standard
3	Identify and <b>troubleshoot</b> , using appropriate technical terminology, simple <b>hardware</b> and <b>software</b> problems that may occur during everyday use, discuss problems with peers and adults (e.g., <b>viruses</b> , <b>malware</b> , versions of software and non-working <b>applications</b> , refresh screen, closing/reopening application, adjusting volume on headphones or speakers).
4	Identify, using appropriate technical terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults, and apply various strategies for solving these problems (e.g., <b>rebooting</b> the device, checking the power, forced shutdown of an application, running anti-virus).
5	Identify, using appropriate technical terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults, apply a variety of strategies for solving these problems, and provide evidence why these strategies did or did not work.

Grade	Essential Skills
3	Effectively communicate, using appropriate technical language, the specific problem encountered when a device or <b>program</b> is not working properly.  Perform basic <b>troubleshooting</b> strategies.
4	Apply a variety of troubleshooting strategies to address the problems that arise with <b>computing devices</b> .
5	Recognize and explain, using appropriate technical language, common problems that occur with computing devices.  Analyze the reasons for success or failure of attempted solutions to problems with computing devices.

Explanation
Students are expected to use accurate terminology to describe simple problems with computer <b>hardware</b> and <b>software</b> in order to effectively communicate issues to others and help resolve problems efficiently. Students should be familiar with common <b>troubleshooting</b> strategies. Examples include restarting a <b>computing device</b> or an <b>application</b> , checking that power is available, adjusting the volume if the sound isn't working, checking that physical and <b>wireless</b> connections to the internet are working, making sure the keyboard, mouse and monitor are properly connected, etc. By fifth grade, students should be able to explain why they chose the strategies they used and the order in which they used them.

Think of this as similar to....
If you are walking and your foot begins to hurt, first you check to see if you have a rock in your shoe, then you check to see if your sock is bunched up, finally you check to see if you have a cut on your foot.

Essential Questions
What are some common <b>troubleshooting</b> strategies you should try if a <b>program</b> isn't working properly?
Why is it important to use appropriate terminology when describing <b>hardware</b> and <b>software</b> issues?
How do you know what strategies to try to solve issues with computing devices?

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

Grade(s)	Title	Description	Link	Content Connection & Notes
3-5	<b>Troubleshooting</b>	<p><b>Grade 3</b>--Troubleshooting should be included organically when using any device. When a problem arises, students articulate what the issue is using appropriate terminology and perform basic troubleshooting steps (restart device, check to make sure device is plugged in, check connections, etc.)</p> <p><b>Grade 4</b>--Students should articulate and apply strategies to troubleshoot; if the issue is with an application they should try to refresh or shut the application down; if the issue is with the volume, they should check the headphones, the volume on the device, etc.</p> <p><b>Grade 5</b>--Students should identify and articulate common problems as such and relate a strategy they choose to troubleshoot a problem to past experience. They should attempt to explain why certain problems occur (the connection between the charger and the device is faulty, there is an adjustment on headphones that is easily to accidentally turn, etc.)</p>		Can post the graphic from <a href="#">Your Computer isn't Broken</a> and use this <a href="#">Basic Troubleshooting</a> video when teachable moments arise.
3-5	<b>Common Troubleshooting Strategies</b>	<p><b>Grade 3</b>--Students identify common computer issues and suggest possible solutions to try. Students could create a set or cards, poster or other reference showing the sets for troubleshooting common issues. They could use this in their own classroom and/or create it for younger classes.</p> <p><b>Grade 4</b>--Students suggest a series of logical steps for each common computer issues. They can consider taking the easiest steps first, the ones that most commonly succeed, etc.</p> <p><b>Grade 5</b>--Identify a problem (mouse doesn't work), relate it to possible issues (poor connection, battery ran out ) and suggest troubleshooting strategies</p>	<a href="#">Common Troubleshooting Strategies</a>	
4-5	<b>Computer Troubleshooting Jeopardy Game</b>	<b>Grades 4 and 5</b> --This resource provides a Jeopardy-style game to help students remember troubleshooting techniques and technical terminology.	<a href="#">Computer Troubleshooting Jeopardy Game</a>	

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