3.CSY.2 Computing Systems

> *The student will use accurate terminology when troubleshooting problems when a computing system is not working as expected. (a) Identify common troubleshooting strategies used to address a variety of hardware and software problems. (b) Explain and apply troubleshooting strategies related to simple hardware and software problems.*

Understanding the Standard

Students will identify and use appropriate vocabulary to describe simple problems with both computer hardware and software as well as perform simple troubleshooting tasks. Common strategies include checking that power is available, checking physical and wireless connections, or swapping a working part for a potentially defective part. Rebooting the machine is the most commonly effective strategy as it resets the computer and clears out the working memory.

Term	Definition
Troubleshoot	Identity and correct faults in a computing system.
Reboot	Turn off a computer and then turn it on again.
Hardware	Physical components of a computing system.
Software	The programs used by a computing system.

Prerequisite Knowledge

Students should have a foundational knowledge of writing step-by-step instructions and utilizing various problem-solving skills.

Integration Opportunities

Math 3.MG.2a Troubleshoot software and hardware issues related to a design task (like creating a virtual garden), while estimating and calculating the area of the garden using different representations, justifying the measurements as they address challenges in the computing system.

English 3.RV.1 a,b,j Students develop content-specific vocabulary through explicit vocabulary instruction and use newly learned words and phrases when identifying and applying troubleshooting strategies to simple computing system problems.

Summary of a Lesson

In pairs, give students two sets of colored index cards to create a matching game. On one color card, students should describe a specific hardware or software problem with as much detail as possible. On the second colored card, the students should describe a troubleshooting tactic to address that problem. Pairs will then create an answer key showing the appropriate matchings and give a brief explanation of why the solution will work. Students will switch their matching games with other groups to compare answers and share explanations.