TROUBLESHOOTING

Course Name: ELA **Time Frame (in minutes):** 45-60 minutes
Unit/Theme: Network and System Design/Troubleshooting **Grade Level:** 4 and 5

CONTENT AND SKILLS
Learning Objectives: • Students will be able to verbalize, design, and implement troubleshooting strategies.
Essential Questions (optional): • How can I trouble shoot independently to problem solve?
Students I can statements . . . • I can verbalize troubleshooting strategies to determine a solution • I can design a teaching tool to highlight that strategy • I can implement troubleshooting strategies independently.
How will you meet the needs of SWD and ELL/MLL students? • Modifications and accommodations according to individualized plans and 504s will be met. • Work with a small group providing brainstorming support
Content Standards List all standards
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NYS Computer Science and Digital Fluency Standards List all standards that authentically align
• 4-6. NSD. 2: Model how computer and software work together as a system to accomplish tasks. • 4-6. NSD. 3: Determine potential solutions to solve hardware and software problems using common troubleshooting strategies. • 4-6. DL. 6: Describe persistence of digital information and explain how actions in online spaces can have consequences. • 4-6. DL. 7: Identify and describe actions in online spaces that could potentially be unsafe or harmful.
NYS SEL BENCHMARKS https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf
• 1A.2a: Range of increasingly complex emotions and possible causes. • 1C.2b: Identify steps in working a goal.

- 2D.2b: Apply simple approaches to navigating conflicts

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.
Add and highlight Standard Indicator next to activity that aligns

- This lesson is suggested to follow lesson one from the five Computer Science and Digital Fluency Learning Standard Lessons.
- Students will have received instruction on risks, safeguards, and responses from the Cybersecurity standard, using lesson one.
- Together, as a whole group, students define and generate a list of hardware and software, so students can begin to identify the difference.
- Watch a BrainPop video on "computers" (hardware/software) and how the two work together as a system. (4-6.NSD.2)
- Think, pair, share additional examples from the BrainPOP video to add to our list.
- Model an example of potential scenario (shutdown example on YouTube-first 45 seconds) that generates a need to determine a potential solution to solve hardware and software problems.
- In small collaborative groups, students will brainstorm a list of possible solutions using the provided graphic organizer to divide into two categories: hardware/software (4-6. NSD. 3)
- Students will engage in a Word Splash of solutions around the room for hardware and software troubleshooting strategies. Add ideas to a larger chart so other students can observe, analyze, and discuss additional solutions.
- Lead students to an understanding through whole group discourse, that some problems are beyond our control (identify examples from charts) while other examples of solutions could be because of student involvement that we could have controlled (identify examples from charts) (4-6.DL.6) (4-6.DL.7)
- **Additional supplemental activity at this point**-could hold a community circle on how we would feel individually if another peer tampered, changed, or deleted work on a platform that they did not have permission to access and change in an online space.
- Bring the class back together, identify the top solutions and eliminate repeat contributions.
- Assign partner pairs to be assigned one of the solutions from the charts.
- Students will work collaboratively in pairs to design and create the assigned solution for a troubleshooting wall of strategies to be used as a resource in the classroom.
- Ideas for creation platforms: PowerPoint slide using the shapes, Canva, Cricut platform, Office 365 Whiteboard
- Students will summarize their learning through a quickwrite after they collaborate on one of the project choices.

MATERIALS / RESOURCES

Add additional resources needed for this lesson such as instructional technology templates, images, videos, etc. *Including Instructional Technology Tools*

- BrainPop video
- Scenario option: shutdown example on YouTube-first 45 seconds
- Graphic Organizer


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EDUCATIONAL SERVICES


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