

MONROE ONE BOCES NYS COMPUTER SCIENCE & DIGITAL FLUENCY ALIGNED LESSON

Grade Level - 4 or 5

TROUBLESHOOTING TECHNOLOGY ISSUES

Course Name: CS Lab

Time Frame: 40-60 minutes

Unit/Theme: Networks and System Design

Grade Level: Grade 4 or 5

CONTENT AND SKILLS
Learning Objectives: problem solving process - communication - Students will be able to troubleshoot technical issues by identifying possible causes and prioritizing solutions based on the likelihood and simplicity of the solution. - Students will be able to effectively communicate their ideas in their groups with clarity and using specific content related vocabulary.
Essential Questions (optional):
Students I can statements . . . - I can troubleshoot many different technology issues on my own. - I can support my classmates when they have technology issues.
How will you meet the needs of SWD and ENL students? Purposeful grouping would support students with disabilities and ENL students
Content Standards
List all standards and how learners will meet the standard
Grade 4 - ELA Listening & Speaking Standards 4SL1: Engage effectively in a range of collaborative discussions with diverse partners, expressing ideas clearly, and building on those of others. 4SL4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace and volume appropriate for audience. 4SL5: Include digital media and/or visual displays in presentations to emphasize central ideas or themes Grade 5 - ELA Listening & Speaking Standards 5SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others. 5SL4: Report on a topic or text, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support central ideas or themes; speak clearly at an understandable pace and volume appropriate for audience. 5SL5: Include digital media and/or visual displays in presentations to emphasize and enhance central ideas or themes.

NYS Computer Science and Digital Fluency Standards

List all standards and how learners will meet the standard

- 4-6.NSD.3 Determine potential solutions to solve hardware and software problems using common troubleshooting strategies
 - Students will identify and develop possible solutions to common issues with Chromebooks
- 4-6.CT.4 Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps
 - Students will determine possible causes to a technical problem and prioritize possible solutions
- 4-6.CT.9 Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging
 - Students will develop multiple pathways to a solution (If this doesn't work → Then...)
- 4-6.DL.4 Use a variety of digital tools and resources to create and revise digital artifacts
 - Students will search for possible solutions to technical problems.

CASEL COMPETENCIES and/or NYS SEL BENCHMARKS

NYS SEL Benchmarks

- **1B.2b-** Explain how family members, peers, school personnel, and community members can support responsible behavior and school success.
- **3B.2b-** Generate alternative solutions and evaluate either consequences for a range of academic and social situations.
- **3C.2a-** Identify and perform roles that contribute to the school community.

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.
How will you make sure this lesson is culturally responsive?

Whole Class Introduction (10 min)

- You can't hear Morning Show - What are all of the things that could be going wrong? Brainstorm at table groups. (Not a solution...yet)
- Share out ideas
- What would you try first? Why?
- What wouldn't you try first? Why?
- State learning target -
 - I can troubleshoot many different technology issues on my own.
 - I can support my classmates when they have technology issues.
- Helpful tech support vs unhelpful - how do you need to structure your solution?
 - shoe tying example - if I do it for you have I solved your problem? Are you able to solve your problem in the future
 - What makes support "helpful"? (learn from it, clear steps, language I

understand)

- Brainstorm common problems students have encountered on district devices or platforms. (i.e. I can't type on my keyboard after switching from tablet mode to laptop. In a Google Meet, I can't hear anyone. I can't find a document in Google Docs. I don't know how to email. I can't sign into...)

Small Group Work (15-20 min)

- Break into groups - each group has to troubleshoot one tech issue and create multiple solutions that are clear and easy to understand.
- Use the steps we went through for the Morning Show problem to create solutions for the task your groups has been assigned.
 - Review steps
 - What could be happening - generate list
 - Prioritize
 - Create as many solutions as possible
 - Keep in mind the language you are using to communicate your solutions

Whole Class Discussion (10 minutes)

- Big picture talk -
- What advice would you give to someone having technical issues? At home? Outside of school? Don't reflect on your specific problem today. Think big. What steps did your group take to solve your problem? (group talk)
- Share out ideas & synthesize

Wrap-up/Optimistic Closure (3-5 minutes)



Optimistic Closure One Takeaway I'm Going to Try



Time: 3-5 minutes

Overview:

Participants are asked to consider and name a take away—an idea, strategy, tool, action step—that they want to try out.



When and Why:

Students or participants are often presented with a variety of ideas, strategies, and tools, with the implicit understanding that they will use one or more of the "takeaways." This activity invites participant to explicitly connect their learning to their practice and encourages ownership and responsibility by taking action.

SEL Focus: This activity focuses on developing skills in **Self-Management** (*Organizational Skills, Goal-Setting*) as participants are asked to set a personal goal and **Relationship Skills** (*Recognizing and Using Supports*) when the accountability partnerships are used.

Steps:

1. Ask participants to reflect on what they have heard and learned, then ask, "Thinking about what you heard and learned today, what is one takeaway you want to try, and why? A takeaway can be an idea, a strategy, a tool, or an action step."
2. Give participants a minute of silent think time.



Debrief by pairing participants and setting a timer for one or two minutes for each person to share their takeaway and thinking with their partner. If time permits, invite several participants to share their own takeaway and thinking (not their partner's) with the whole group.

ASSESSMENT(S) / PROJECTS / PRODUCTS

- Because this is a STEAM Lab, stand alone, lesson, there is no formal assessment or project.

INSTRUCTIONAL TECHNOLOGY INTEGRATION

- This is a technology lesson with Speaking and Listening Standards and SEL standards embedded into it.

MATERIALS / RESOURCES

- problem solving cards (Multiple groups can work on the same problem; the focus is on the steps students are taking not the actual solution)
 - Google Meet audio/video issues
 - Camera/Mic not working within an application
 - Chromebook keyboard won't reactivate after flipping back from tablet mode
 - Log in won't work
 - Frozen Screen
 - Video won't load

- No internet connection
- Game won't load
- Can't find a document in Drive
- Part of my presentation got erased (lead to version history in Google)
- Cursor too small/big
- Chromebook won't turn on
- Chromebooks for students to use to develop solutions