



8. Troubleshooting Q1 Magic Power Cycle



[8. Troubleshooting](#)

[8.Q1 Magic Power Cycle](#)

Overview of this Thing: Welcome, young tech enthusiasts! Have you ever experienced the frustration of things going wrong with your computer at the most inconvenient moments? Well, fear not! We have a mission for you that will defy Murphy's Law and equip you with the skills to troubleshoot common computer problems. Get ready to become problem-solving superheroes as you embark on the four exciting quests ahead. Are you up for the challenge? Let's dive in!

Thing Learning Objectives

1. Know how to troubleshoot basic computer problems [Computational Thinker & Empowered Learner].
2. Understand basic computer and network troubleshooting [Empowered Learner].
3. Be able to create a flowchart demonstrating troubleshooting techniques [Empowered Learner].
4. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions. [Knowledge Constructor].

Overview of this Quest: In this Quest, students will watch a basic troubleshooting video and create a graphic organizer and flowchart of the steps they can take to do a regular restart of the device they most often use.

Quest Learning Objectives:

I can:

- Explain why turning my device off and on again is an important first step when troubleshooting technology problems.
- Describe why many people skip the simple power cycling step when they're trying to fix their devices, even though it often works.
- Demonstrate the proper way to turn off and restart my device to perform an effective power cycle.
- I can identify the benefits of power cycling, such as fixing software glitches and making my device run faster and more smoothly.
- Use power cycling as my first troubleshooting strategy before trying more complicated solutions to technology problems.

Link to [Vocabulary Quizlet](#)

Vocabulary:

Factory Reset: A factory reset is a more drastic step that erases your device's data and settings, restoring it to its original factory state. It is usually done as a last resort when other troubleshooting methods have failed or when you want to erase all personal information before selling or giving away the device. It is important to note that a factory reset will delete all your data, so it's crucial to back up any important files before performing this action.

Hard Reset - A hard reset is a more forceful way to restart your device. It involves holding down specific buttons or keys to force the device to turn off and then turning it back on. It is typically used when the device is frozen or unresponsive

Murphy's Law: Murphy's Law is a way of expressing the common experience that when something can go wrong, it often does, and often at the worst possible time.

Power Cycle - Power cycling is another term for restarting. It involves completely shutting down your device and then turning it on again.

Factory Reset - a more drastic step that erases all the data and settings on your device, restoring it to its original factory state. It is usually done as a last resort when other troubleshooting methods have failed or when you want to erase all personal information before selling or giving away the device. It is important to note that a factory reset will delete all your data, so it's crucial to back up any important files before performing this action.

For accommodation ideas, visit the [Accommodations Toolbox page](#), then select the "Quest/Area of Need" listed in the menu on the right side of the page.

Pre-Planning

Introduction page: Students will watch a basic troubleshooting video and create a graphic organizer and flowchart outlining the steps to restart the device they use most often.

Note: Some of the specific steps demonstrated in the video may be outdated due to frequent software updates and hardware redesigns.

Vocabulary page: Students will review vocabulary words and then play the [Quizlet Vocabulary Game](#).

Magic Power Cycle: Restarting Your Device page

Students will use a graphic creation application, like [Google Drawings](#) ([flowchart example template](#)), or [Canva](#), to create a graphic organizer and flowchart of the steps they would take to



Except as noted, content on this site is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Commercial use requests should contact: executivedirector@remc.org.

do a regular restart of the device they most often use. An example of a graphic organizer is shown on the Quest page. **NOTE:** On their graphic organizer, make sure to include important steps so they don't lose any of their work.

- Share their troubleshooting graphic organizer with a classmate. Quest to Answer: Are your steps the same or different, and why?
- Talk with their classmate to decide how they would explain the following:
 - Why is restarting a device considered an effective troubleshooting step?
 - The importance of power cycling to someone who doesn't know about it, in a way that's easy to understand.
 - What is the first step when their computer doesn't turn on?
- Additional reflection questions that might be helpful for discussion:
 - What surprised you most about power cycling as a troubleshooting technique? Did you expect such a simple step to be so effective?
 - Think about a time when you or someone you know had a technology problem. How might power cycling have helped in that situation?
 - What was the most challenging part of learning proper power cycling techniques? What made it easier to understand?

Completing page: Students have completed this Quest when they have:

- Understood the importance of turning a device off and on as a troubleshooting technique.
- Explained why many people overlook the simple step of power cycling when troubleshooting.
- Demonstrated how to properly turn off and on a device to perform a power cycle.
- Recognized the potential benefits of power cycling, such as resolving software issues and improving device performance.

If students are using the Student Portfolio, add a hyperlink and a screenshot of your flowchart to your student portfolio. You should already have a copy or download of [this portfolio](#) created and saved in your Google Drive or Microsoft files.

Videos and resources in this Quest. You must check that students have access to these resources on their devices.

Websites:

- [Canva Flowchart Templates](#)
- [Google Docs](#)
- [Google Drawings](#)
- [Google Drawings Flowchart Template](#)
- [Office 365](#) (Word)



Except as noted, content on this site is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Commercial use requests should contact: executivedirector@remc.org.

21T4S Videos

- [Basic Troubleshooting: Off and On Again Video \(5:33\)](#)

21T4S Documents & Quizzes

- [Troubleshooting Flowchart Template](#)
- [Vocabulary Quizlet](#)

Student Checklist [8.Q1 Student Checklist](#)

Broken Link or Content Update Report



Please select [this link](#) or the broken link icon to report any broken links or content no longer applicable so that we can quickly update it. Thank you for your help.

Assessment Options:

Ideas for assessing student work for this Quest? Link to a rubric you create for this Quest, a quiz, and or a worksheet you create. See [Rubric](#) by Liz Kolb.

- The Quizlet for vocabulary
- A completed flowchart correctly showing the troubleshooting sequence
- The completed digital portfolio, if it is being used



Except as noted, content on this site is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Commercial use requests should contact: executivedirector@remc.org.