

# Activity 03-1: Check Your Understanding of the Troubleshooting Model

## Big Idea

Using a proven troubleshooting model is a fundamental aspect of IT support. There are several industry-standard troubleshooting models, but if you are going to take the certification exam for CompTIA IT Fundamentals+ or A+, you need to know those CompTIA troubleshooting models. They're basically the same, but the A+ model combines some of the steps in the IT Fundamentals+ model. Using a proven methodology saves you time, effort, and money so that you don't misdiagnose a problem or make it worse rather than better. Any time a service request has to be addressed more than once or the wrong part is ordered or installed costs the IT Department money.

## Materials

Flash Cards

## Vocabulary

Troubleshooting  
Troubleshooting Model  
Knowledge Base  
Theory of Probably Cause  
Full System Functionality  
Preventive Measures  
Documentation  
Replicating a Problem  
Remote Access Tool  
Power-On Self-Test (POST)  
FAQ (Frequently Asked Questions)  
Vendor  
Question the Obvious  
Divide and Conquer  
Root Cause  
Escalate/Escalation



## Background

The CompTIA Troubleshooting models are listed below. Note how the A+ model is very similar but simply condenses two of the steps in the IT Fundamentals+ model. This activity will use the IT Fundamentals+ model and can be modified to the A+ model.

You should not only memorize the steps of the model, you need to *internalize* them. That means you need to know them inside and out. You need to know them forward and backward and which step comes before and after the step you're currently using. You also need to understand common actions you might take in each step.

| <b>CompTIA IT Fundamentals+ Troubleshooting Model</b>   | <b>CompTIA A+ Troubleshooting Model</b>  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Identify the problem.</li> <li>2. Research the Knowledge Base.</li> <li>3. Establish a theory of probable cause.</li> <li>4. Test the theory to determine the cause.</li> <li>5. Establish a plan of action to resolve the problem and identify potential effects.</li> <li>6. Implement the solution, or escalate as necessary.</li> <li>7. Verify full system functionality and, if applicable, implement preventive measures.</li> <li>8. Document findings/lessons learned, actions, and outcomes.</li> </ol> | <ol style="list-style-type: none"> <li>1. Identify the problem (includes Research the Knowledge Base).</li> <li>2. Establish a theory of probable cause.</li> <li>3. Test the theory to determine the cause.</li> <li>4. Establish a plan of action to resolve the problem and implement the solution. (combines steps 5 and 6)</li> <li>5. Verify full system functionality and, if applicable, implement preventive measures.</li> <li>6. Document findings, actions, and outcomes.</li> </ol> |

## Activity Directions

1. Use the following cards with actions listed on them. Based on the action, determine which step you are on. These cards can be printed out as flashcards using duplex (two-sided) printing. The action is on one side, and the correct step of the IT Fundamentals+ Troubleshooting Model is on the back.
2. Use the flashcard template to add additional actions and steps.



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| <p>You ask a customer when a problem first occurred.</p>   | <p>You ask a customer to go through the actions they did that seem to cause an issue.</p>                      | <p>You ask the customer if anything has changed with their device or the network recently.</p>  |
| <p>You try to replicate the problem a customer has reported to the help desk.</p>  | <p>You determine how many people are or are potentially impacted by a reported issue.</p>                      | <p>You don't take time to gather sufficient information about a problem and come up with an incorrect solution. Which step do you need to go back to?</p> |
| <p>You use a remote access tool to log into someone's device on a different campus to access logs and determine how they relate to a problem they have reported.</p> | <p>You run a Power-On Self-Test (POST) and record the beeps or flashing lights to help indicate a problem.</p> | <p>You visit a FAQ (frequently asked questions) site the IT Department has created.</p>   |



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| <b>Identify the problem.</b> | <b>Identify the problem.</b> | <b>Identify the problem.</b>        |
| <b>Identify the problem.</b> | <b>Identify the problem.</b> | <b>Identify the problem.</b>        |
| <b>Identify the problem.</b> | <b>Identify the problem.</b> | <b>Research the Knowledge Base.</b> |



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| <p>You visit a vendor support website.</p>   | <p>You search the Internet for the same or similar issues.</p>                          | <p>You watch videos online about an issue.</p>  |
| <p>You review documents about common service requests and associated best solutions.</p> | <p>You identify the most likely situation causing the problem you're investigating.</p> | <p>You question the obvious because there might be multiple problems with similar symptoms.</p>   |
| <p>You divide and conquer by breaking an issue down into different problem areas.</p>    | <p>You have isolated an issue to a faulty power supply.</p>                             | <p>You use a checklist of common issues and cross off the systems that are working correctly.</p> |



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| <p><b>Research the Knowledge Base.</b></p>          | <p><b>Research the Knowledge Base.</b></p>          | <p><b>Research the Knowledge Base.</b></p>          |
| <p><b>Research the Knowledge Base.</b></p>          | <p><b>Establish a theory of probable cause.</b></p> | <p><b>Establish a theory of probable cause.</b></p> |
| <p><b>Establish a theory of probable cause.</b></p> | <p><b>Establish a theory of probable cause.</b></p> | <p><b>Establish a theory of probable cause.</b></p> |



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| <p>You try to determine if you have truly identified the root cause of an issue during your research.</p>      | <p>You test only one solution at a time.</p>  | <p>You changed multiple issues and made the problem worse. Which step did you NOT do correctly?</p>  |
| <p>You suggest to your supervisor that the problem is too costly to resolve.</p>                               | <p>You note that the device was scheduled to be decommissioned in a few months so you recommend NOT repairing it.</p> | <p>You have to tell a customer (e.g., teacher) that you cannot upgrade software as requested but suggest they use a similar application instead.</p> |
| <p>Your solution doesn't work as planned so you ask someone else in the IT Department to review the issue.</p> | <p>You carefully document the steps you take as you address an issue.</p>   | <p>You use your documentation to reverse the steps you took.</p>   |



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| <p><b>Test the theory to determine the cause.</b></p>   | <p><b>Test the theory to determine the cause.</b></p>   | <p><b>Test the theory to determine the cause.</b></p>   |
| <p><b>Establish a plan of action to resolve the problem and identify potential effects.</b></p> | <p><b>Establish a plan of action to resolve the problem and identify potential effects.</b></p> | <p><b>Establish a plan of action to resolve the problem and identify potential effects.</b></p> |
| <p><b>Implement the solution, or escalate as necessary.</b></p>                                 | <p><b>Implement the solution, or escalate as necessary.</b></p>                                 | <p><b>Implement the solution, or escalate as necessary.</b></p>                                 |





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| <p>You don't have access to information or resources necessary to address an issue, so you ask someone else to take over the ticket.</p> | <p>After you've implemented your plan, you take steps to make sure everything is operating as it should.</p>  | <p>After identifying one networked printer requires updated firmware, you recommend to your supervisor that all networked printers be checked and have their firmware updated, if necessary.</p>             |
| <p>You have updated a shared printer so make sure every staff member who uses it can access it.</p>                                      | <p>You tell your supervisor that an issue could have been prevented if students were turning their computers off and on so they install security updates.</p> | <p>You're the first person to resolve a new issue so your supervisor asks you to write a new Knowledge Base article.</p>   |
| <p>You pull together information from help tickets to update a Knowledge Base article.</p>   | <p>You and a colleague created a short screenshot video of how you repaired a software setting issue.</p>   | <p>You work furiously to close a bunch of help tickets. You identify a common issue across them but feel like you are too busy to stop working and report it. Which step do you really need to complete?</p> |



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| <p><b>Implement the solution, or escalate as necessary.</b></p>                                   | <p><b>Verify full system functionality and, if applicable, implement preventive measures.</b></p> | <p><b>Verify full system functionality and, if applicable, implement preventive measures.</b></p> |
| <p><b>Verify full system functionality and, if applicable, implement preventive measures.</b></p> | <p><b>Verify full system functionality and, if applicable, implement preventive measures.</b></p> | <p><b>Document findings/lessons learned, actions, and outcomes.</b></p>                           |
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