

## 5.3 Troubleshooting Basics Section

Grading:

Notes: \_\_\_\_\_/20

Lesson Review: \_\_\_\_\_/20

Vacuum Computers: \_\_\_\_\_/30

PP clean computers: \_\_\_\_\_/30

Total points: \_\_\_\_\_/100

### Essential Question

- Why is it important for all computer users to have basic troubleshooting skills?

### Section 5.3 Learning Goals

After completing this section, you will be able to:

- Explain a basic procedure for troubleshooting computer problems.
- Identify the steps for analyzing hardware problems.
- Describe common troubleshooting steps for software problems.

### Competencies

- 6670.62 Identify basic problems associated with computer hardware, operating system, and application software.
- 6670.63 Describe risk-mitigation techniques (e.g., policies, procedures, hardware, and software).
- 6670.68 Perform basic remote connection troubleshooting.

### Terms

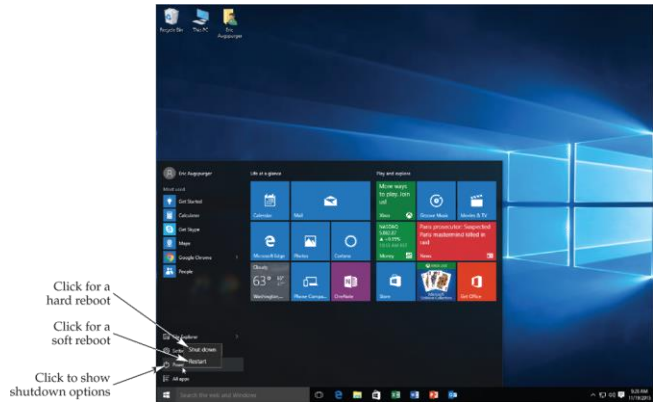
- device firmware upgrade (DFU) mode
- factory-default settings
- hard reboot
- hard stop
- rebooting
- restore point
- safe mode
- soft reboot
- task manager
- troubleshooting

### Troubleshooting

- **Troubleshooting** is systematically \_\_\_\_\_ the problem to find a solution
  1. Identify symptom of problem
  2. Check for power on
  3. Check display for messages
  4. Use Windows \_\_\_\_\_ and Support
  5. Visit online forums
  6. Ask a friend

## 7. Contact technical support

- Rebooting may solve a hardware problem
  - **Rebooting** is \_\_\_\_\_ the system
  - **Soft reboot** is using the restart function of the operating system; also called a *warm reboot*
  - **Hard reboot** is powering down the system and then restarting it; also called a *cold reboot*
- Getting Troubleshooting Help
  - Windows Help accessed via [F1] key
  - Help is context sensitive
    - Press [\_\_\_\_\_] in an application: help is for application
    - Press [F1] in the desktop: help is Windows help
  - Forums hold previous conversations of help
  - Help feature \_\_\_\_\_ printed manuals
    - Search for online versions in PDF or HTML format
    - Search model of component with “user manual”
- Safe Mode
  - **Safe mode** is a Windows boot setting in which the computer starts up with the \_\_\_\_\_ of functions necessary to run
  - Computer starts up with minimum functions
  - Helps isolate problems
- Troubleshooting Checklist
  - Good to have a set sequence of steps to follow
  - First stage is \_\_\_\_\_ problem
  - Second stage is applying fixes

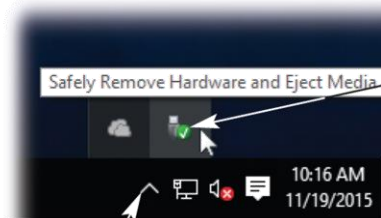


## Troubleshooting Hardware Problems

- **Hard stop** occurs when computer ceases to function
  - “\_\_\_\_\_ screen of death”
  - System cannot recover from error
  - Computer can no longer understand input
- Analysis
  - \_\_\_\_\_ down error messages
  - Check LEDs and cables
  - Restart device
  - Check for overheating
  - Run antispysware, antivirus, antimalware
  - Use Windows \_\_\_\_\_ feature
- Firmware
  - Firmware is \_\_\_\_\_ installed software
  - Firmware may need an upgrade
  - iOS devices have a **device firmware upgrade (DFU) mode** that provides the

ability to upgrade or downgrade the firmware

- Cables and Connections
  - Verify cables are in \_\_\_\_\_ condition
  - Inspect connectors
- Troubleshooting Devices and Peripherals
  - Always download and \_\_\_\_\_ the newest drivers
  - External Storage
    - Reboot system with device connected
    - Properly remove external storage devices
      - Safely Hardware and Eject Media
      - Eject



Click to eject drive

Click to display menu

#### Troubleshooting Hardware Problems

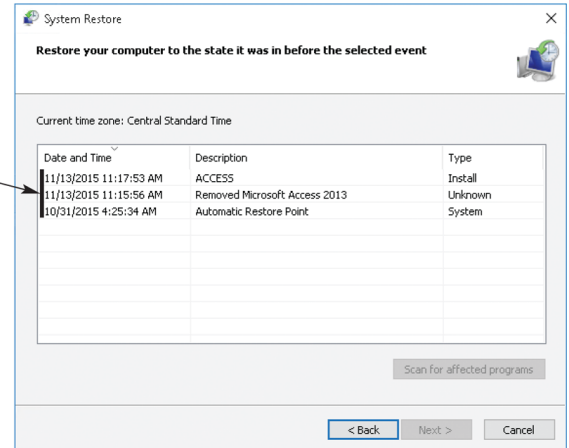
- Troubleshooting Devices and Peripherals
  - Printers
    - Check \_\_\_\_\_ for messages
    - Reinstall device driver
  - OS Versioning
    - Match drivers to OS version
    - New OS version may require new device drivers

#### Troubleshooting Software Problems

- Operating Systems
  - Composed of many different programs
  - OS may be corrupted
  - Try reboot
  - Check for most \_\_\_\_\_ version
- Using Task Manager
  - **Task manager** analyzes what is going on in the system and reports the results.
  - Launch with [Ctrl][Alt][Delete] key combo
  - \_\_\_\_\_ nonresponding applications or terminate processes
- Windows Startup Programs

- List of \_\_\_\_\_ launched at boot time
- System configuration utility manages startups
- System Restore
  - Returns system \_\_\_\_\_ and settings to the state they were in, or **restore point**, at an earlier date or time
  - Does not affect user documents

Available restore points



Top 10 PC problems and ways to fix them

- #10 Dead system:
  - Verify power is on
  - \_\_\_\_\_ for lights and listen for sounds
  - Check connections and power outlets
- #9 Screen is blank:
  - Verify the monitor is on
  - Check \_\_\_\_\_ (video cable, power)
  - Move the mouse/Press the space bar
  - Check power system settings (mainly for laptops)
- #8 Series of beeps during boot process
  - Long and continuous + CPU
  - Short and continuous = RAM
  - Key something is \_\_\_\_\_ with the Boot process
- #7 Cannot Print
  - \_\_\_\_\_ the printer is on
  - Check printer cable & power connections
  - Check the driver software
- #6 Error message “non system disk”:
  - Check for a floppy disk in the driver
- #5 Error message displays during booting:
  - The procedure depends on the error
  - See the \_\_\_\_\_ menu or reinstalls OS
- #4 I may have a virus...
  - Check for \_\_\_\_\_ on web
  - Get updates from another computer
  - Ref. Virus section
- #3 A peripheral device is not working
  - Check Device Manager
  - Ensure card is seated
  - Verify the \_\_\_\_\_ software is up to date
- #2 Forgotten Password
  - MAC: boot from the Install CD and reset from within the Aqua GUI or boot



6. What is the first step in troubleshooting a computer problem?
  - a. Start (power up) the computer
  - b. Select safe mode during the booting process
  - c. identify the symptom
  - d. seek on-line assistance or call the computer manufacturer to explain the problem
  
7. What is the name given to software that has been permanently stored in the computer?
  - a. Hard software
  - b. Startup ware
  - c. Malware
  - d. Firmware
  
8. What is the purpose of the System Configuration utility?
  - a. Helps diagnose problems encountered during Windows startup
  - b. Disables processes and connections between the OS, memory, and the Recycle bin
  - c. Facilitates defragmentation of the hard drive
  - d. Prints out all recent error messages
  
9. Which of the following utilities can be used to return system files and settings to the state they were in at an earlier date or time?
  - a. File Restore
  - b. File Purge and Reset
  - c. System Reset
  - d. System Restore
  
10. T/F In the Windows environment, when user sees “the blue screen of death” it means that the computer has come to a hard stop, and it means that the computer has completely stopped functioning.

### **Cleaning computers**

We will be vacuuming out the computers. You will be allowed to use your phone to take pictures while you are doing this lab. The pictures will be used for a PowerPoint you will create showing how you cleaned the computers.

You have done some research on the best way to do this. Here are a few more.

1. Shut computer down
2. Remove all the cables
3. Use the handle on the tower to remove the lid, set it in a safe location

4. Take it to the table as instructed by your teacher
5. Set the vacuum up to suck not blow out. You will just be blowing the dust and not cleaning anything.
6. Very gently use vacuum to remove the dust. There are a few smaller brushes if you find some stubborn areas.
7. When done, clean up the area you were working
8. Take computer back to desk, put lid back on and plug all the cables back in, and start your computer
9. If it does not start check your cables to make sure they are all plugged in properly

**Cleaning PowerPoint**

1. Create a PowerPoint that shows the process you used to clean the computer.
2. Include the important protections you put into place to ensure you did not damage the computers.
3. You may include the pictures you took.
4. Minimum of 6 slides including title with you and your partners names.