

Clean Up & Speed Up your Computer

Lesson Plan

After attending this class a student will have some basic knowledge about installing and uninstalling software, updating software, and managing the space on their computer.

Lesson Objectives

At the end of the class, the student will:

* Know how to uninstall software/programs.
* Be able to clear up hard drive space on a computer.
* Understand what can cause a computer to slow down.

Lesson Prep Work

(30 min, at a minimum, prior to student arrival)

* Get in early to test for technology failure, because it will happen :-)
* Install 3rd party software on computer/laptop (CCleaner, Showsize, Revo [optional])
* Install a piece of software to remove from PC for demo! (Overdrive Media Console or Malware Bytes)
* print handouts

Lesson Prerequisites

Basic computer skills required.

Lesson Outline

The lesson is completed in one (60) minute class session.

*(5) minute Introduction*

* Introduce instructor, students.
* Let students know it’s okay to take phone calls, but ask them to put their phone on vibrate and answer calls outside the classroom.
* Inform students that they can sit back and watch if the class is too advanced.
* Inform students they can go to the bathroom, they don’t need permission.
* Show order in which class will happen. Explain scope of class.
* Mention staying safe online and protecting your computer!
* Ask students at introduction:
  + Have you ever had a computer run really slow? Have you been unable to save something because your hard drive was too full?

(10) Diagnosing why your computer is running slowly

* *Explanation*
  + Sometimes you may not know exactly why your computer is running slow, but you can usually identify the culprit if you know what to look for. Here are some reasons why your PC might be slowing down:
    - Your hard drive might be full: You can try defragging (which we’ll mention later in the class), but the real solution is to either get a newer, larger hard drive, or make some hard choices about what to delete (or offload to an external drive).
      * *Activity: Check the space on your hard drive*
        + Step 1: Open up a file explorer window.
        + Step 2: Right click on the C: Drive
        + Step 3: Select properties
        + Step 4: Admire the pie graph that indicates how much space you have and haven’t used.
        + Step 5: Close the pie graph.
    - New programs: That thing you downloaded that allows you to convert videos to mp3 files, and those three toolbars you have in your browser, those are all taking a little chunk of the resources that your computer can devote to accomplishing tasks. Oftentimes, even legitimate programs can come bundled with what is affectionately called bloatware.
      * *Activity: See how many programs are installed on your computer*
        + Step 1: Select the start button
        + Step 2: Select the control panel
        + Step 3:Select Programs and Features
        + Step 4: Marvel at the list of programs you have on your computer.
        + Step 5: Close the list.
    - Watch your security software: Make sure that your antivirus is up to date, and make sure you only have one piece of antivirus software running at a time.
    - Keep your OS and necessary software up to date: Windows and OS X will often release security patches (patches are software designed to update a computer program). Make sure you’re downloaded them (we’ll check to see if automatic updates are turned on later, so stay tuned).
    - Reduce the number of programs that autoload when your computer starts up: Sometimes your computer will boot slowly because you have 15 different pieces of software that all automatically start when you turn your computer on. We’ll talk about how to fix this, don’t worry.
    - You could be infected!: Spyware, Adware, and viruses are notorious for slowing down machines, but are often times not the culprit. Having up to date antivirus, and making good decisions about what you download and where you go online will save you a lot of trouble down the line.

(15) Uninstalling stuff you don’t use

* *Explanation*
  + Unnecessary programs take up computing resources and space. Sometimes you may want to remove software from your computer but won’t know how or won’t be able to via conventional methods.
* *Discussion: Have you ever had a piece of software on your computer and you don’t know how it got there?*
* *Activity: Install a piece of software (I’m using Malware Bytes for example).*
  + Step 1: Open Firefox web browser
  + Step 2: Google search for “Malware Bytes”
    - Malware Bytes is an anti-malware software (attend the Antivirus and Malware 101 class for more information).
  + Step 3: Navigate to the cnet.com site to download Malware Bytes
    - *Teachers Tip: This is a great opportunity to talk about “fake” download buttons and encourage people to attend Staying Safe Online.*
  + Step 4: Click on the correct “Download now” button (on left hand side of screen)
  + Step 5: Select “Save file” when the dialog box appears
  + Step 6: Download box will appear and show progress bar of Malware Bytes download
  + Step 7: Double click on file once it’s finished downloading (explain that most downloaded files will be saved to the “Downloads” folder on Windows PC’s)
  + Step 8: Select “Run”
  + Step 9: Select OK on language selection screen
  + Step 10: Select Next
  + Step 11: Select “I accept the agreement”
  + Step 12: Select “next” on setup screen
  + Step 13: Select “next” on next three screens and then “install” on the final installation screen
  + Step 14: Uncheck all the boxes on the final Setup screen (update malware bytes, launch malware bytes, enable free trial…)
  + Step 15: Click Finish
* *Activity: Uninstall Malware Bytes*
  + *Explanation*
    - Removing software is just as important as installing it. If, for instance, we longer wanted to use Malware Bytes we would want to get rid of it.
  + Step 1: Click on the start button.
  + Step 2: Select control panel.
  + Step 3: Select Uninstall a program in Windows 7.
  + Step 4: A list of all software installed on your machine will be populated.
  + Step 5: Scroll down the list and select Malware Bytes.
  + Step 6: Point out information regarding software:
    - Last used
    - How often used
    - Size (this leads to a larger discussion about what “Size” means to a computer)
    - *Explanation*
      * The size of a program is typically displayed in bytes. Kilobytes, or Megabytes, or Gigabytes. Think of bytes this way (I recommend the teacher draws this on the board):
        + One byte is equal to about a character (letter or number or special character).
        + A kilobyte is a thousand bytes (So about a ½ page of text).
        + A megabyte is a thousand kilobytes (So a large book).
        + A gigabyte is a thousand Megabytes (So a thousand books, or about 250 or 300 mp3 songs).
        + A terabyte it a thousand Gigabytes, which is a million books, or three hundred thousand songs.
  + Step 7: Select remove program.
  + Step 8: Follow the uninstall prompts.
  + NOTICE: You should see the program removed from the list.
  + If you don’t know what a program does – DON’T UNINSTALL IT!
* *Activity: Google the name of the software to figure out its function!*
  + Step 1: Open an internet browser.
  + Step 2: Go to google.com.
  + Step 3: Type in 7-zip (or another piece of software from the software list).
  + Step 4: Select www.7-zip.org for more details (it’s software to unzip files [or compress them]).
* *Comprehension check:*
  + Why do we want to remove programs?
  + How do we remove programs?
  + (Optional): Tell class about Revo uninstaller (which can be downloaded at cnet) for those really hard to remove programs like toolbars, etc.

(15) Deleting temporary files with CCleaner.

* *Explanation*
  + Your computer stores temporary information.
    - URLs
    - Cookies
    - Temporary files (word and excel create these as back-ups and sometimes they don’t delete correctly).
  + CCleaner is a very convenient and easy to use tool that can automatically “clean up” your computer by removing unnecessary and temporary files.
    - *Metaphor:**Spring cleaning! Time to move the furniture and sweep underneath it. Seriously though, wash your walls.*
* *Activity****:*** *Find, download, and install CCleaner*
  + Step 1: Open up Firefox
  + Step 2: Google CCleaner
  + Step 3: Select the piriform.com/CCleaner website (piriform is the company that makes CCleaner).
  + Step 4: Select the “download” button.
  + Step 5: There is a paid version, but select the filehippo.com link underneath CCleaner free.
  + Step 6: Select the “Download latest version” link in the upper right hand corner of the screen.
  + Step 7: Select “save file.”
  + Step 8: Open up the file explorer.
  + Step 9: Select the “downloads” folder on the left hand side.
  + Step 10: Open the ccsetup414.exe file.
  + Step 11: Follow the install prompts (Pay special attention to the check boxes and make sure you are installing what you want to).
  + Step 12: Deselect “view release notes” on the final screen, and click the “finish” button.
* *Activity****:*** *Using CCleaner to remove temporary files.*
  + *Explanation of CCleaner interface*
    - Cleaner – deletes temporary files, empties recycle bin, etc.
    - Registry – Registry cleaner (more on this later)
    - Tools – program uninstaller, startup, system restore, drive wiper (not necessary, explain briefly if there are questions).
    - Options – Options silly goose, options.
  + Step 1: Select cleaner (we will only be using the cleaner today).
  + Point out options and control user has over what can be deleted.
    - *Teachers Tip: Usually the settings CCleaner uses by default are acceptable. For further information, recommend they do some research.*
  + Step 3: Click “Run CCleaner” to delete the selected files.
* *Activity: NOT using the Registry Cleaner*
  + We strongly recommend not using the registry cleaner unless the user knows what they’re doing and has made a backup of the registry.
  + Messing with your registry can cause some programs to not work and may require a system restore, or worse, a re-format.
  + The computer registry is an index for the computer. It’s written in computerese, so only the computer can really understand it.
  + *Activity: (optional: show registry)*
  + Most likely, cleaning your registry will not speed up your PC.
* *Comprehension check:*
  + Why do we want to remove temporary files?
  + When should we use the registry cleaner? (hint: almost never!)

(15) Figuring out where all the space on your computer has gone.

* *Explanation*
  + After you’ve removed unnecessary programs and temporary files, you may still find your computer is still full of stuff.
  + *Metaphor:**Having a computer full of stuff is like having a messy kitchen, it’s really hard to get anything done.*
    - *Teachers Tip: Talk about how a hard drive accesses information (spinning disk).*
  + You can also right click on any file and select properties to see how much space the file/folder is using up.
  + There is software called Showsize that can help.
* *Activity****:*** *Find, download, and install Showsize*
  + Step 1: Open up Firefox.
  + Step 2: Google Showsize.
  + Step 3: Select the Cnet site.
  + Step 4: Download Showsize.
  + We will not be downloading Showsize but we will be demoing it
* *Activity: Using Showsize* 
  + Step 1: Open up Showsize
  + Step 2: Click on program files on left column to populate list of all programs on PC.
  + Step 3: Click on columns and click “size” to select it
    - Point out graph of size (visual representation of how large the file is compared to the other folders/files).
    - Reiterate discussion of file size.
    - Show tabs that allow you to select just files, folders, etc.
  + Show size is a great tool for figuring out what is taking up space on your computer. BUT:
    - You will still need to manually delete a lot of files.
    - Look in “My documents” to start with (this holds photos, videos, and any documents you’ve written). Most user created content will wind up here.
  + Make good decisions when deleting ANYTHING on your computer!
* *(Optional) Activity: Delete a file (if low skill class)*
  + Step 1: Select My documents
  + Step 2: Select My pictures
  + Step 3: Select Sample Pictures
  + Step 4: Select a picture, right click, and select delete.

(15) Installing OS and software updates

* *Explanation*
  + Not only do you need to update the operating system and software on your computer to make it run better, it will also help protect you from malicious attacks.
  + The most important things to keep updated are:
    - Your OS – Windows or OSx (or Linux, weirdo).
    - Flash – online video player (you use it for Youtube videos).
    - Java – used for online animations. A lot of security experts will recommend you disable Java entirely.
    - Your browser of choice – Recommended Google Chrome or Firefox.
* *Activity: Turning on Automatic updates in Windows 7*
  + Step 1: Click on the start button.
  + Step 2: Click on Control Panel.
  + Step 3: Click on System and Security.
  + Step 4: Click on Windows Update.
  + Step 5: Click the Change Settings link.
  + Step 6: To enable automatic updates select “install updates automatically”.
* *Activity: Turning on Automatic updates in Windows 8*
  + Open the charms menu.
  + Select Settings.
  + Select Change PC settings.
  + Select Update and Recovery.
  + Select Choose how updates get installed.
  + Choose the appropriate options under drop down menu.
* *Activity: Checking to make sure you have the latest version of Flash and Java installed*
  + To check Java version:
    - Step 1: Navigate to [www.java.com/verify/](http://www.java.com/verify/)
    - Step 2: Select Verify Java version
  + To check Flash version:
    - Step 1: Navigate to [www.adobe.com/software/flash/about](http://www.adobe.com/software/flash/about)
    - Step 2: Your Flash version information will be displayed.
    - Step 3: The most recent Flash version information will be listed below that.
      * *Teachers Tip: If students ask about the version #’s, just explain that the higher the # the more recent the update.*
    - You can download the newest version of flash by selecting the “Player Download Center” link on the page.

(15) Other ways to improve your computer’s performance

* *Explanation*
  + Getting rid of junk software and clearing up space on your machine are two of the easiest most effective ways to speed up your PC, but there are a couple of other things you can do as well.
    - Defrag your machine
      * *Explanation*
        + Defragmenting your hard drive is not as vital as it used to be (considering that modern hard drives are huge), but if you have an older machine with Windows XP it might be useful. Defragging means that you are taking programs and files that have been written to your hard drive and moving any fragments into a contiguous region (the hard drive is a mechanical spinning platter, so the closer like files are together the easier they are to read).
      * *Activity: Navigate to the disk defragmenter*
        + *Explanation*

Windows 7, Vista, Windows 8, and OSx will defrag automatically, but if your computer is not on during the defrag time (which is usually set at some odd hours by default) you may want to manually do it if your computer is running especially slow.

* + - * + Step 1: In Windows 7 select the start button
        + Step 2: Type in Defrag into the search menu
        + Step 3: Select Disk Defragmenter.
    - Removing programs from the start up menu
      * *Explanation*
        + Sometimes you will have software that you want to keep on your computer, but you may not want it to start up automatically when your computer boots. There are two ways to prevent this:

Make sure that during the installation of the software that you deselect the “Starts at startup” check box.

Remove it from the startup menu in Windows 7 by using msconfig.

* + - * + *Activity: Use Msconfig to navigate to start up menu*

Step 1: Select the start button.

Step 2: Select Run (or type msconfig into the search bar).

Step 3: Type Msconfig and press enter..

Step 4: Navigate to the startup tab.

BE VERY CAREFUL HERE – Make sure the software you are deselecting is something that is not vital to Windows. Once again, if you don’t know what something does, don’t select ANYTHING.

* + - Installing or adding more RAM (random access memory) or a larger hard drive.
      * *Explanation*
        + Sometimes slowness issues are the result of old and outdated hardware. And while it does require some skill (and patience), you can install a new hard drive, or add extra ram to a compatible mother board. Please google it for further information (or attend the computer hardware 101 course).
    - Make sure you only have one antivirus running
      * *Explanation*
        + Antivirus is necessary, but it takes up a lot of your system resources. Having two antiviruses is not only bad because they will often view the other antivirus software as a potential threat, but they will hog up all your resources. Disable and/or uninstall any unnecessary antivirus software.

**(5)** *Conclusion*

* Go over handout, review material, and emphasize contact info & further resources on handout.
  + Show how to download the software from cnet. (ccleaner and showsize!)
  + Google: how to clean up your PC (point out lifehacker as a reputable source)
* Great time to take questions, people will most likely have them.
* Remind patrons to practice; assign take-home-practice - remind them they can ask for help
* Remind to take survey.

What This Lesson Does Not Cover

* Defragging – this is taken care of by most modern OS’s, so it really doesn’t deserve any direct attention (just a mention).
* Anti-virus software, malware removal, adware and spyware removal. We have a class on this. It’s 100% worth mentioning at the beginning of class!
* Formatting your hard drive (although this might be worth a mention).

Key Decisions

1. Included demoing installation of software

Appendix

<http://download.cnet.com/ShowSize-Disk-Space-Analyzer/3000-20432_4-10021691.html> - showsize

<https://www.piriform.com/ccleaner/download> - ccleaner download link

<http://en.wikipedia.org/wiki/Computer_registry> - windows registry description

<http://www.wikihow.com/Clean-Your-Computer-System> - how to clean your computer

<http://lifehacker.com/5897138/how-to-speed-up-clean-up-and-revive-your-windows-pc> - lifehacker article about cleaning your PC.

[www.java.com/verify/](http://www.java.com/verify/)

[www.adobe.com/software/flash/about](http://www.adobe.com/software/flash/about)