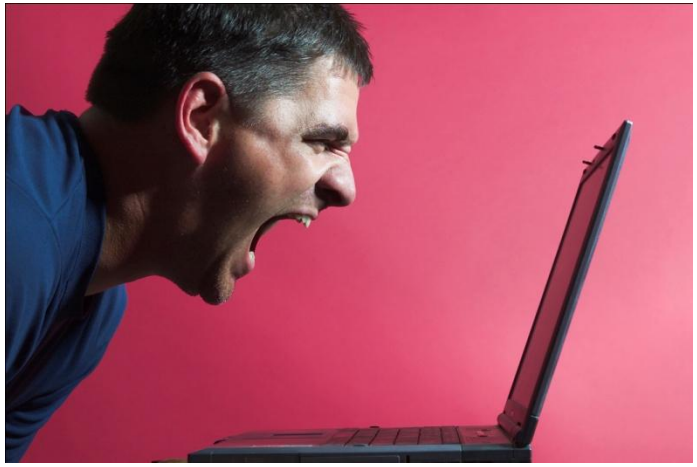
NOHS Computer Club Seminar:

PC Maintenance and Technology Purchase Guide



North Olmsted HS Computer Club

http://www.NOHSteachers.info/PCaso/NOHSCompClub

INTRODUCTIONS

THOSE PARTICIPATING IN OUR SEMINAR TONIGHT:

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When replacement funds are limited:

PC Maintenance Guide

Paula Caso

Maintenance Topics:

Software Related:

- Defragment
- Virus scan/ Spyware scan
- Regular Updates
- Disk Cleanup "Anticlutter"
- Uninstalling Programs correctly
- Registry Cleaners
- Backups

Maintenance Topics:

Hardware Related:

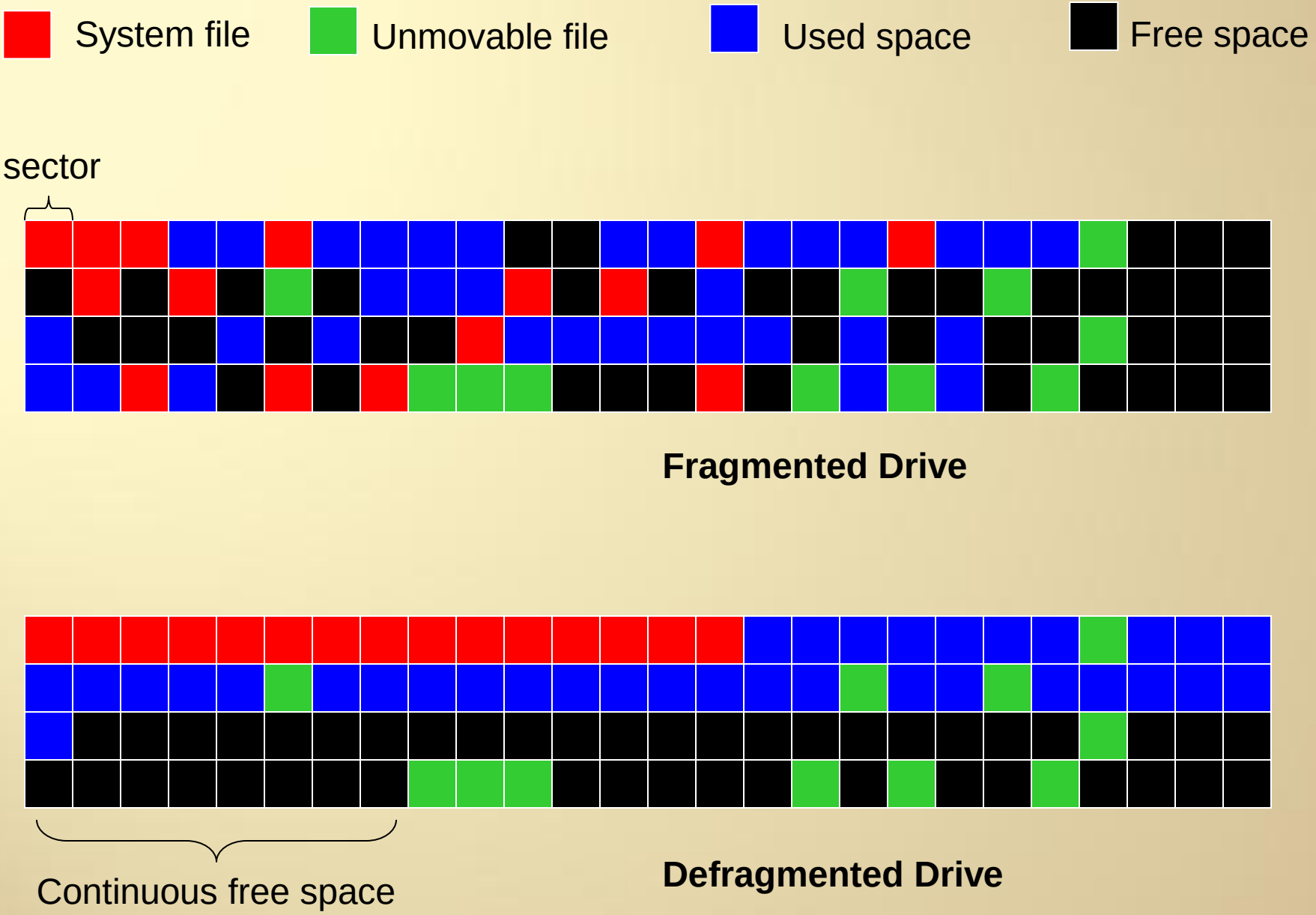
- Surge protectors
- Compressed air
- Safe cleaners for external parts
- Cleaning ball mice
- Allowing space for fans
- Liquid away
- Surroundings of your computer

SOFTWARE BASED MAINTENANCE

Mike Koch

Defragmenting

- Your hard drive is made up of "sectors"
- When Windows writes a file, it tries to find the largest amount of continuous free sectors.
- Sometimes, a file must be spanned across multiple free sectors, slowing access times
- Defragmenting attempts to clump used, unused, and system sectors together to allow Windows to have the greatest amounts of free sectors possible.


System file
Unmovable file
Used space
Free space
sector
Fragmented Drive
Continuous free space
Defragmented Drive

Virus scan / Spyware scan

- Running these scanners ensures that malware is not slowing down you computer, and ensures that your files and information stays private.
- Perform a "quick" scan at least once a week, and a "full" or "thorough" scan every other week.
- Check for virus definition updates at least daily, if not done automatically by the program.

Updating your computer

- Configure *Automatic Updates* in the Control Panel, so that important updates are downloaded and installed automatically.
- If you do not have automatic updates active, be sure to check for updates weekly (preferably Tuesday evening or Wednesday morning).
- Even with automatic updates enabled, be sure to manually check for updates that are not "important" or "critical".

Disk Cleanup "Anticlutter"

- Organize folders on your computer to hold data logically, just as you would with actual folders.
- Periodically check to see if you can uninstall any programs that you no longer need.
- Empty your Recycle Bin daily.
- Run Disk Cleanup to clear out temporary files. (Start -> All Programs -> Accessories->System Tools -> Disk Cleanup).

Uninstalling Programs correctly

Start with the built-in Add/Remove Programs applet in the Control Panel.

Once complete, ensure that no extra folders or files are left behind.

Or, run a program such as RevoUninstaller (provided on the CD), which runs the built-in installer, *and* checks for left-over files, folders, registry keys, etc. and removes them as well.

Registry Cleaners

The Registry is the backbone of the system, which contains all settings for your machine.

- **Pro:** Registry Cleaners will scan for dead entries (called keys), whose removal can fix errors and improve performance.
- **Con:** If you make a mistaken change or delete an important key, you can render your system useless.

Backing up your computer

- Copy important files or folders over to an external hard drive, a CD, jump drive, or other removable media on a weekly basis.
- Windows Vista and Windows 7 includes a decent backup utility, or there is one included on the CD.
- BETTER SAFE THAN SORRY – hard drives don't last forever.

HARDWARE BASED MAINTENANCE

Tyler Smith

Surge protectors

- Surge protectors prevent the computer and other components from being damaged during a power outage.
- Most newer computers also come with a trip switch that prevents the computer from turning on again after a surge or outage.

Compressed air

- Compressed air is useful for cleaning out the small areas of your computer, its case, and components such as the keyboard and speakers.
- Make sure that you have proper ventilation before using compressed air.

Safe cleaners for external parts

- Read all warnings on monitor and components before using any chemicals.
- Some chemicals can damage these components.

Cleaning ball mice

Step-by-step instructions with pictures:

http://www.wikihow.com/Clean-a-Mouse-Ball

Liquids

- Ensure that no liquids are near the computer, monitor, laptop, etc.
- Liquids can cause the component to short out, and be permanently damaged.
- If liquid comes in contact with a component, unplug it from the power and other attached devices.

Surroundings of your computer

- Ensure that the system has proper ventilation.
- If the computer is against a desk or wall, the air will not be able to properly circulate out of the system.

When the technology is just too old:

Purchase Guide

Computers: Desktop

- **Where do I start? Should I go PC or Mac?**
  - This is not much of a debate if funds are limited. Macs, although often of a higher quality, are also more expensive.
  - Interestingly, Macs can also run Windows 7 although they come with their own operating system (Mac OS X).
  - How you plan to use the machine really guides the choice.

Computers: Desktop

- **What are the advantages of the Mac?**
  - Macs have fewer problems with viruses, trojans, and other malware.
  - Macs are incredibly easy to use for music, video and photo editing. They are true multimedia machines.
  - They are not so good at "playing well with others" if running in the native Mac OS.
  - They were not originally designed to be business class machines.

Computers: Desktop

- **What are the advantages of the PC?**
  - The PC running Windows is not as easy to use for music, photo, and video editing.
  - PC's were originally designed as business machines.
  - Because there are many manufacturers, the prices of the hardware are much more competitive and various levels of quality are available.
  - Levels of support vary by brand. Macintosh has only one hardware manufacturer which runs its OS. Support is easier when you make both the OS and the hardware. That's not the case with PC's.

Computers: Desktop

- **What should I look for in a computer?**
  - Operating System
  - RAM (aka Memory)
  - Hard Drive space
  - Processor type and speed
  - Video card
  - Sound card (if that's important to you)
  - Size of the machine and does it come with a monitor?

Computers: Desktop

- **What is RAM and how much do I need?**
  - RAM (Random Access Memory)
  - Amount needed depends on operating system and software programs.
  - For Vista, minimum of 1GB is needed, 2 to 4 GB is better.
  - For Windows 7, 1GB is good for the 32-bit version and 2 GB is good for the 64-bit version.

Computers: Desktop

- **How big of a hard drive do I need?**
  - Again, size depends on how it's used. If you are using the machine for video editing or storage, have tons of music or tons of photos… you need a large hard drive.
  - Hard drives come in gigabyte sizes and in the larger terabyte sizes. A terabyte is 1000 gigabytes.
  - If you have lots of video, music and/or photos, go for the terabyte size. Prices aren't bad.
  - An alternative it to add on an external hard drive.

Computers: Desktop

- **What is the meaning behind all that jargon about GHz, Core Duo, Quad core, centrino, AMD, Intel, etc?**
  - GHz is the speed of a processor
  - Core Duo = 2 processors on one chip. So, 2.4 GHz in Core Duo = 4.8 GHz or close to it on single processor chips like the older Pentium 4.
  - Quad-core = 4 processors on one chip.
  - Centrino processors are for laptops or netbooks and help extend battery life.
  - AMD & Intel are the two main chip manufacturers.

Computers: Desktop

- **What should I look for in a monitor?**
  - First of all… does the computer you are looking at come with a monitor?
  - Sizes similar to TV specs… measured at the diagonal.
  - Widescreen versus standard.
  - Resolutions & contrast ratio.
  - Glossy versus matte.
  - Types of input: VGA, HDMI, DVI.
    - Confused about HDMI and DVI? Check out http://www.aurora.se/dvi-hdmi.htm for a great explanation.

Computers: Laptop

- **What if I need portability? What's the difference between a Laptop, a Notebook and a Netbook?**
  - Physical size as described by the screen size (10" – 12" is a netbook most of the time).
  - Processor (Intel Atom is for netbooks).
  - Operating System (XP or Windows 7 Starter Edition are for netbooks).
  - Other features.

Computers: Netbook

- **Why are netbooks seemingly so popular?**
  - The very low price of a netbook is its most attractive feature.
  - Extreme portability.
  - Simplicity.
  - Drawback: no DVD drive on most netbooks.

Computers: Notebook

- **What is the difference between a notebook and a laptop then?**
  - **Notebook:**
    - A slightly small laptop. Generally 14”-15”
    - Light weight
    - Thin when closed.
  - **Laptop:**
    - Screen sizes from 15” – 18”
    - Some intended to be desktop replacements
    - Although portable, they are heavier.

Computers: Upgrading

- **Why Windows 7?**
  - "What windows vista should have been!"
  - Home networking - Manage all of your media from one computer to another
  - Internet TV - Watch free online trailers, movies, and shows!
  - Pin Programs to the taskbar.
  - Aero Snap and Aero Shake
  - Live taskbar

http://www.microsoft.com/windows/windows-7/compare/default.aspx

Computers: Upgrading

- **Why Windows 7?**
  - Windows live essentials - available on any operating system or most of them
  - Jump lists - most commonly visited websites, documents, etc.
  - Uses up less ram - makes computer go way faster than xp or vista
  - USB Device Manager
  - Backup and Restore
  - Backing up from vista to 7.

Computers: Upgrading

- **Add-ons:**
  - Printers
  - External Hard Drives
  - TV Tuners
  - Connecting to media centers
  - Other gadgets, like cameras

Printers

- **If I want to print my pictures, what kind of printer should I get? … or should I have them printed at a store?**
  - If you are just printing standard 4 x 6 pictures or very large (over 8.5 x 11) pictures, you'll find the quality and price both better at a picture kiosk in your local Wal-mart or drugstore.
  - If you want to print larger (up to 8.5 x 11) pictures or edit the pictures on your computer, create collages, etc. You'll probably want to print at home

Printers

- **If I want to print my pictures, what kind of printer should I get?**
  - Color Laserjet
  - Inkjet
    - Single cartridge
    - 2 cartridge
    - Multiple cartridges for different colors.

Printers

- **What are the advantages to a laser printer?**
  - The laser printer is usually cheaper per print… in the long run.
  - You can get more pages per cartridge.
  - Color laser printers have improved greatly. Photographs actually come out very well.
  - Black and white laser printers have lowest overall cost
  - Disadvantage: the toner cartridges are much more expensive when you go to buy one.

Printers

- **What are the advantages to an inkjet printer?**
  - The quality for photographs is usually very good.
  - The cartridges are cheaper, but don't last as long.
  - They can print on more varieties of media than a laser printer. Some can even print labels to CDs made with a special coating.
  - Because there's no heat involved, they are more versatile.
  - Initial cost is usually less and they are more available.

External Hard Drives

- **Add-ons:**
  -

TV Tuners

- **Add-ons:**
  -

Media Centers

- **Add-ons:**
  -

Cameras

- **Why is there such huge price range?**
  - Point-and-shoot: a camera on which you cannot directly set the primary photographic controls of aperture and shutter-speed. Some other features are adjustable on some models.
  - Prosumer: advanced digital cameras with complete manual controls and high-quality fixed lenses although they usually have automatic modes too.
  - SLR(*Single Lens Reflex*): a camera which has a single lens where incoming light is reflected into the viewfinder. Generally only for serious photographers.

Cameras

- **Why is there such huge price range?**

  - Point-and-shoot
    - Cheapest
    - Simplest to use
    - Most Compact
    - Often with an LCD only for setting up shots (screen on back)
    - Prices as low as $50 for a decent model.

Cameras

- **Why is there such huge price range?**

  - Prosumer:
    - a contraction of professional and consumer .
    - Usually has both an LCD screen and an optical view finder.
    - Some with wide-angle lenses or high zoom capability will have an electronic viewfinder for better detail.
    - These cameras have more user adjustable settings although they also have an “auto” mode.
    - Prices are higher, but bottom end around $300.

Cameras

- **Why is there such huge price range?**

  - SLR:
    - Intended for serious photographers.
    - Always have a viewfinder and an LCD.
    - Have completely customizable settings.
    - Have additional accessories like add-on flash, interchangeable lenses, filters, etc.
    - Create the best pictures, often in TIF file format.
      - The TIF files are larger and can be edited without loss of clarity easier.
    - Base price is around $600.

Cameras

- **What is a megapixel and is it important?**
  - This is a measure of the number of sensors arranged in the camera.
    - The table relates the megapixels to some common screen sizes.
    - More megapixels means larger pictures.
    - If you are not going to print vary large prints, very high megapixel values are not necessary.
    - Most digital cameras are over 3 megapixels now!

Name	Resolution (megapixels)	Width x Height
CGA	0.064	320×200
EGA	0.224	640×350
VGA	0.3	640×480
SVGA	0.5	800×600
XGA	0.8	1024×768
SXGA	1.3	1280×1024
UXGA	1.9	1600×1200
WUXGA	2.3	1920×1200

Cameras vs Camcorders

- **If the camera can do video, why get a camcorder?**
  - Digital Camera Video is intended for small sizes and generally posted on the Internet.
    - It is immediately saved in a common video file format such as .AVI, .MPG, or .MOV.
    - The picture size is usually small and becomes very blurry when viewed full screen.
  - Camcorders are designed for video meant to be viewed on a DVD/TV screen.
    - Sizes are larger and full screen is clear.
    - File formats are usually unique to the manufacturer and they provide a conversion program.

Camcorders

- **What types of storage are there in camcorders?**
  - Camcorders come with a variety of storage techniques
    - MiniDVD: stores directly to a miniDVD
    - Hard drive: stores to an internal hard drive.
    - SDHC card: stores to a high capacity SD card like a digital camera.
    - Tape (miniDV): stores to a miniDV tape..

For more information:

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- On the web:
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    - http://www.NOHSteachers.info/PCaso/NOHSCompClub

Have a good evening!