



# Caring for Your Computer

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*Created by the Columbia Basin Alliance for Literacy*



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# Caring for Your Computer

How can you keep your computer physically clean and safe?

Computers are expensive and you will want to protect your investment. It is not difficult to keep your computer healthy and in good working order. Basically, there are four things you should do:

- Keep your computer physically clean and safe.
- Maintain your computer system and files.
- Protect your computer from threats.
- Use basic trouble shooting techniques.

## Keep Your Computer Physically Clean

Dust can potentially destroy parts of your computer. One of the best things you can do to keep your computer working properly and to avoid expensive repairs is to clean it regularly.

## Clean the Keyboard

A dirty keyboard can cause it to not work properly. Check your owner's manual to see if the manufacturer has provided instructions for cleaning your keyboard. If so, follow them. Or follow these steps:

1. Disconnect the keyboard from the PS/2 or USB port (unplug the computer first if you have a PS2 port).
2. Use a can of compressed air to clean between the keys, spraying the air at an angle to reach beneath the keys.
3. Turn the keyboard upside down and move it back and forth to loosen dust, tapping the bottom of the keyboard to dislodge any particles.
4. Pour rubbing alcohol on a soft cloth or anti-static wipe and wipe the keys and keyboard.
5. Reconnect the keyboard once it is dry.



PS2 Port

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Rubbing alcohol works just as well as specialized products and is usually less expensive. Whether using rubbing alcohol or another cleaning fluid, never pour the liquid directly on the keyboard. Always wet the anti-static wipe or paper towel first.

## Clean Liquid Spills

If you spill liquid on the keyboard, quickly shut down the computer. Then:

1. Disconnect and turn the keyboard upside down to allow the liquid to drain.
2. Hold the keyboard on its side under running water if the spill is sticky.
3. Turn the keyboard upside down to drain for two days (the keyboard may not be repairable at this point, but rinsing the sticky liquid off the keyboard is the only chance for it to be usable again).

The best way to avoid this situation is to keep drinks away from the computer!

## Clean the Mouse

It important to keep your mouse clean if you want to easily point, click, and drag items around the screen. There are two main types of mice, mechanical and optical. Each is cleaned in basically the same way, although the mechanical mouse requires a few extra steps and is especially susceptible to dust and particles.



Optical Mouse



Mechanical Mouse

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Optical mice require no internal cleaning since there aren't any rotating parts. However, they can get sticky over time as dust collects near the light emitter or on sticky pads. This can prevent the mouse from working well.

Before you clean your mouse, check your owner's manual to see if the manufacturer has provided you with instructions on how to clean your mouse. If not, follow these steps:

## Mechanical Mouse:

1. Disconnect the mouse from the PS/2 or USB port (unplug the computer first if you have a PS2 port).
2. Turn the mouse upside down and push and turn the ball-cover ring in the direction indicated on the mouse to unlock the ring. If you don't see any arrows, push the ring and turn counter clock-wise.
3. Turn the mouse sideways to remove the ring and tracking ball and rinse the tracking ball with water.
4. Use an anti-static wipe, paper towel, or cotton swab dampened with rubbing alcohol to remove the dust from inside and outside the mouse.
5. Let all the parts dry.
6. Reassemble the mouse and reconnect it to the computer.



PS2 Port



Mechanical Mouse with Ball-Cover Ring Removed

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## Optical Mouse:

1. Disconnect the mouse from the PS/2 or USB port (unplug the computer first if using a PS2 port).
2. Turn the mouse upside down.
3. Use an anti-static wipe or paper towel lightly dampened with rubbing alcohol to lightly wipe the bottom of the mouse.



Optical Mouse Turned Upside Down

## Clean the Monitor

Dirt, finger prints, and dust can make your computer screen difficult to read. There are two main types of monitors: cathode ray tube (CRT) and liquid crystal display (LCD). Older model CRT monitors have glass screens, while newer LCD monitors are flat-panel monitors made of segments filled with liquid crystals. Follow the instructions based on the type of screen you have.

### Glass Screen:

1. Turn off the computer and unplug it.
2. Disconnect the monitor from the computer case.
3. Use a paper towel, lint-free cloth, or monitor-cleaning cloth dampened with water or an ammonia free glass cleaner to clean the screen.

Be sure your screen does not have anti-glare protection if you are using anything other than water!

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LCD Screen:

1. Turn off the computer and unplug it.
2. Disconnect the monitor from the computer if working with a desktop computer.
3. Wipe a dry, soft cloth or special monitor cleaning cloth across the screen.
4. Dampen the cloth with rubbing alcohol if dust, fingerprints, or dirt remain on the screen.

Don't spray any liquids or use paper towels or glass cleaners on LCD screens!

## **Clean Other Computer Surfaces**

Dust is your computer's main enemy. To get rid of dust:

1. Use an anti-static wipe to lightly dust your monitor housing and other computer surfaces. Don't use furniture cleaners or strong solvents.
2. Use a can of compressed air with a narrow nozzle to blow out debris from the air intake slots.
3. Spray cleaning solution on a paper towel or anti-static wipe. Clean the monitor housing and case (not the screen).

A safe cleaning solution for computer surfaces (not computer screens) is ammonia diluted with water, or glass cleaner comprised mostly of ammonia and water (check the label). The milder the solution, the better!

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## Keep it Cool

Allow air to flow around your computer, whether it is a laptop or desktop model. An internal fan cools your computer; dust and dirt can cause the fan to fail. Avoid putting your computer in an area with a lot of dust and don't stack papers, books or other items on or around your computer. Beware of computer desks that don't allow for adequate air flow.

Ensure the air vents on the underside of your laptop computer aren't blocked by your lap, furniture, or blankets if you use your laptop in bed. This can cause laptops to overheat, shutdown, or cause other damage.

## Protect Against Power Surges

Surge protectors protect your computer from electrical power spikes, or surges. Surge protectors are not to be confused with power bars or power strips, which offer no electrical protection but are convenient for plugging in multiple cords. Surge protectors do nothing to protect against power lows or brown outs, where the voltage falls below 110 volts. The only protection for brown outs is an Uninterruptable Power Supply (UPS). A UPS is basically a surge bar with a back-up battery that makes up for any power loss.



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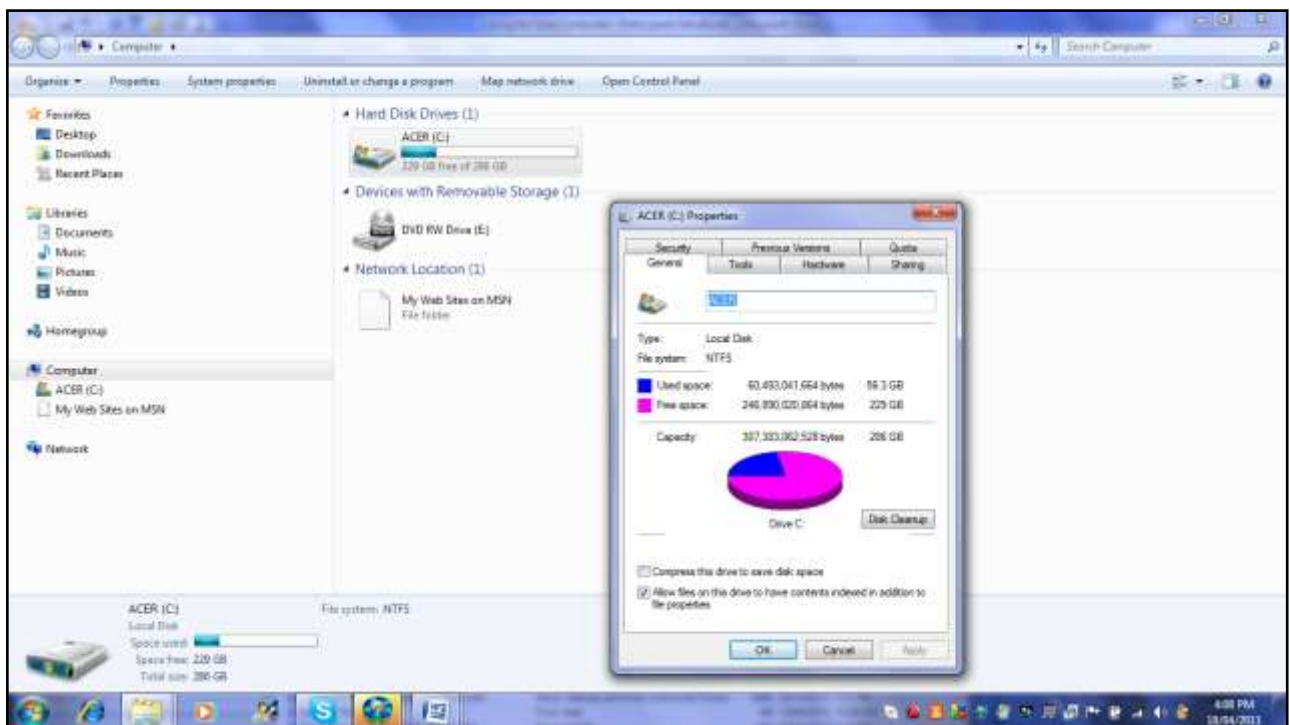
How can you maintain your computer system and files?

Doing preventive maintenance, such as deleting files and folders, helps keep your computer running smoothly. Preventive maintenance saves you time as well, since it can save you the hassle of dealing with system failures and data loss.

## View Storage Capacity

Having adequate storage capacity, or free space, on your hard drive is important to your computer's speed, efficiency and ability to add software and store files such as pictures, music and video. To view your computer's storage capacity:

1. Click **Start**.
2. Click **Computer**.
3. Right click **(C:)** drive.
4. Click **Properties**.
5. View how much free space you have on your computer in the dialog box that appears.





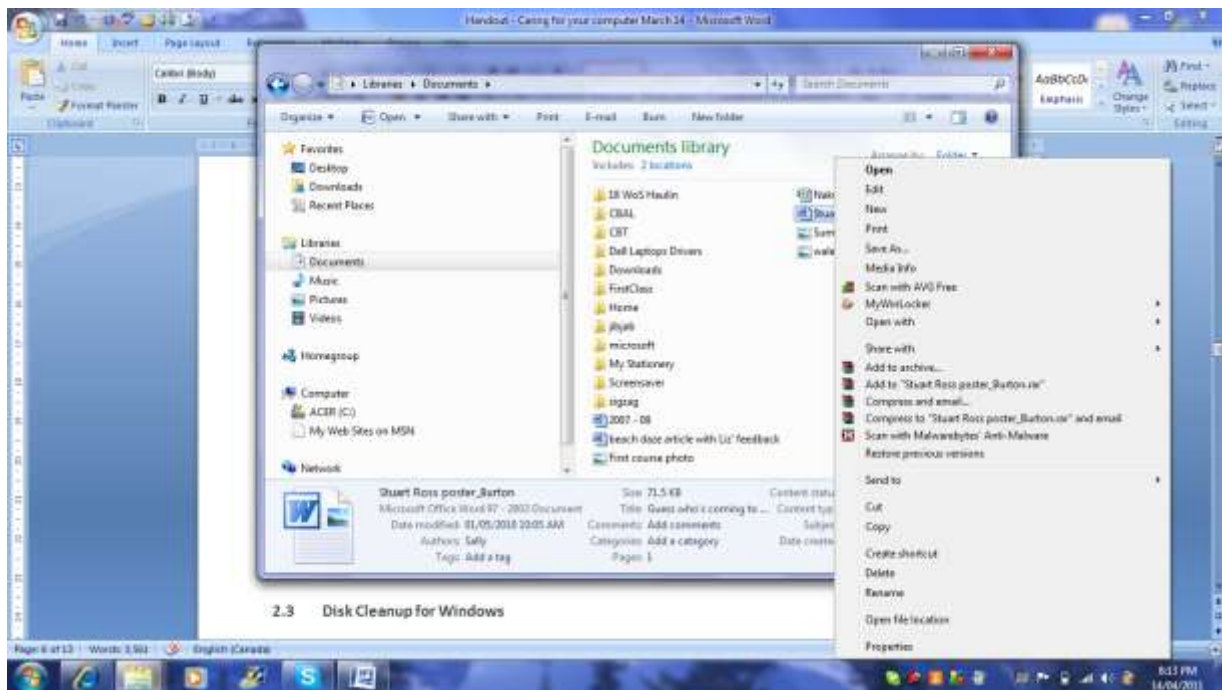
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How can you maintain your computer system and files?

## Delete Files

Deleting files and folders helps free up valuable hard disk space. For example, you may want to delete a letter you wrote two years ago or a folder of photos you took on vacation of people whose names you no longer remember. To delete a file or folder:

1. Go to **Libraries** or **Documents** to find the file or folder you wish to delete.
2. **Right-click** the file or folder.
3. Choose **Delete** from the menu that appears.



Or:

1. Go to Libraries to find the file or folder you wish to delete.
2. Click on the file or folder and drag it to the **Recycle Bin** (the desktop icon that resembles a wastebasket).
3. Drop it in the **Recycle Bin**.

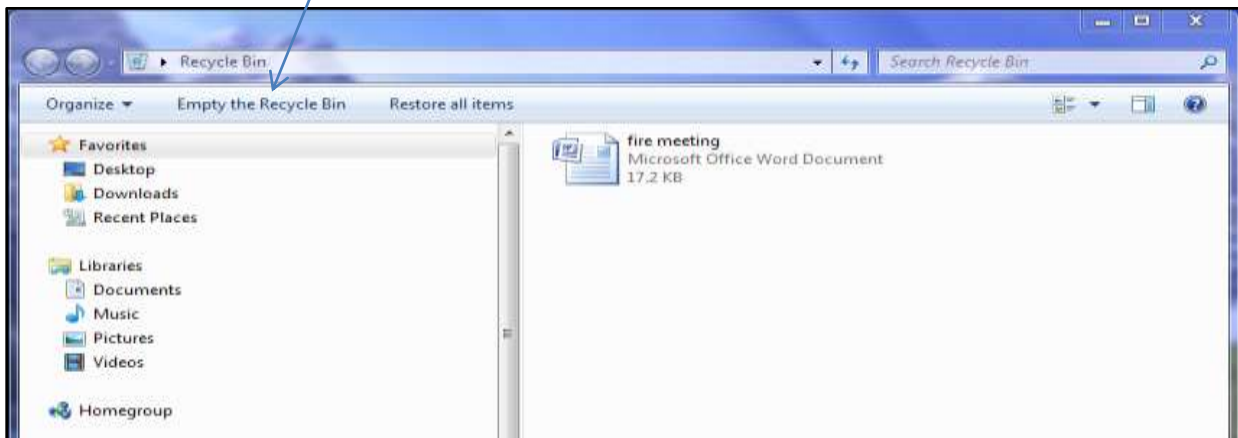
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How can you maintain your computer system and files?

## Empty the Recycle Bin


When you delete files from your computer, or move them to the Recycle Bin, they are temporarily stored in the Recycle Bin. To permanently delete files from your computer you will need to **Empty the Recycle Bin**:

1. Double-click the Recycle Bin icon on the desktop.
2. Click **Empty the Recycle Bin** in the window that appears.



## Use Disk Cleanup

When you install software, operate programs, and surf the Internet, temporary files are created. These files can clutter your computer and slow it down. Windows comes with a **Disk Cleanup** utility that removes temporary files and empties the **Recycle Bin**, freeing up valuable hard disk space. To use **Disk Cleanup**:

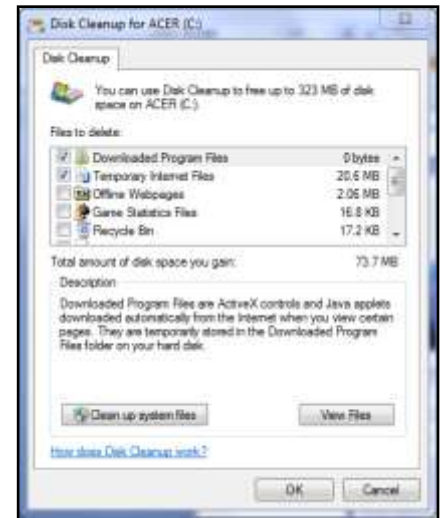
1. Click on  **Start**.
2. Type "disk cleanup" in the Search bar.
3. Click on **Disk Cleanup** from the options that appear (or Disk Cleanup may start automatically).

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How can you maintain your computer system and files?

4. Click on OK to proceed with **Disk Cleanup** (cleanup time will vary depending on how often you use this utility and the status of your computer files).

Disk clean up may also be activated from the Properties window.



## Defragment Your Computer

Over time and with regular use, files and folders on a computer's hard drive break down, or become fragmented. This can cause the system to run slowly and to experience processing problems. Defragmenting the computer, also known as defragging, generally improves retrieval time and overall performance. On most new computers, the disk defragmenter has been set up and scheduled without you having to activate the process. To defrag your computer:

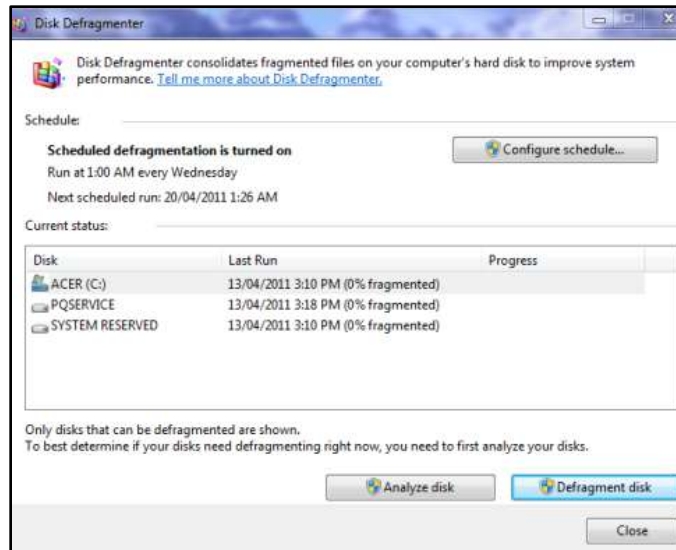
1. Click on **Start**.
2. Type "disk defragmenter" in the Search bar.
3. Click on Disk Defragmenter from the options that appear.

The disk defragmenter window will identify your computer's schedule for defragging. You can also start the defragging process at any time.



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How can you maintain your computer system and files?



## Backup Files

There are two types of file backup, automatic and manual. Automatic backup is a handy approach, which usually consists of an external hard drive with a software program that automatically scans your files and backs them up. This back up can be done on a schedule or on-the-fly, which means the program is always searching for updated files to be backed up. Manual backup consists of the user copying data onto a media device (flash drive, external hard drive, CD-R or DVD –R). To manually back up files on a flash drive, or memory stick:

1. Insert the flash drive in one of the USB ports on your computer.
2. **Copy** the file or folder you wish to save.
3. Go to **Computer**.
4. Double click to open your **Removable Disk**.
5. Right click and **Paste** your file or folder in your **Removable Disk** folder.

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## How can you protect your computer from threats?

You may be wondering where computer threats come from. People are responsible for creating them. Some are meant to be funny, while others are meant to do damage to your computer. Here are some things you can do to keep your computer safe from threats.

### **Define Common Threats**

#### Viruses:

Just as a biological virus can make you physically sick, a computer virus can make your computer sick. A virus is a small piece of software that finds its way onto your computer without your knowledge and causes trouble on your computer system. You may not even know your computer has been infected with a virus until your computer slows down, a program stops working, your computer crashes, or error messages begin appearing.

Many viruses are transferred by email. The virus will travel as an email attachment, and when the attached file is downloaded, the virus will begin to do its job. Often, email viruses will continue to spread by attacking your address book, emailing your contacts, and spreading the virus more.

#### Trojan Horses:

Another destructive piece of software similar to a virus is a Trojan horse. A Trojan horse is simply a program that claims to do one thing, but really does something else to your computer. For example, you may find a site on the Internet and download what you think is a solitaire game, only to run the program and have it delete files.

#### Worms:

A third item you need to safeguard your computer against is worms. Unlike viruses, worms do not attach to other files or programs, but spread themselves over

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How can you protect your computer from threats?

computer networks by taking advantage of the network setup. Worms can delete files or send emails like viruses, but usually they affect the computer's memory, which slows down your computer. This is a particular threat in the workplace where employees' computers are often networked to each other.

## **Use Anti-virus Software**

The best thing you can do for your computer is use an anti-virus software. Anti-virus software protects your email, files, and downloads against viruses, worms, and Trojan horses; removes existing threats from your computer; and protects against new viruses if the anti-virus software is updated regularly.

There are several free options, or you can purchase a commercial one such as Norton or McAfee, which are relatively inexpensive when you think about the damage that can be done to your computer. If you already have anti-virus software, verify your virus protection is current as new viruses are written all the time. This doesn't mean that you have to continuously purchase new software; most anti-virus software provides automatic updates.

## **Avoid Downloading Programs from Unknown Sources**

The Internet is full of unknown sources. If you are going to use the Internet, become a savvy web surfer. Learn to explore a website to determine if it is a credible site. For example, if you spend some time on the GCFLearnFree.org site you will see that the site is organized and well designed. There is information about the organization, as well contact information in the form of a physical address and email addresses. This is a credible site. Think about who is responsible for a website and make your best judgment before downloading games, programs, or documents from unknown sources.

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How can you protect your computer from threats?

## Be Cautious of Suspicious Emails and Email Attachments

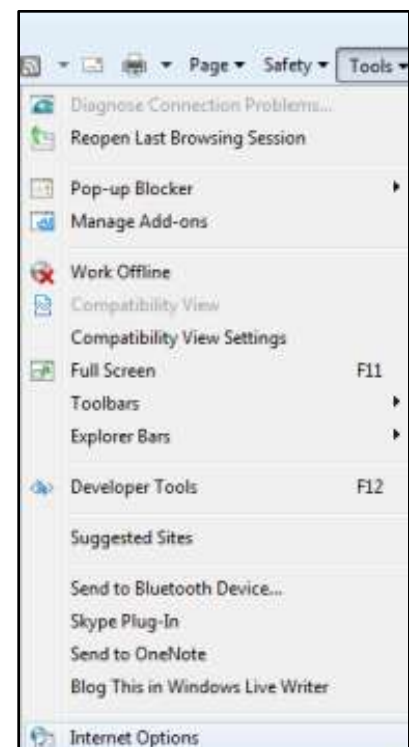
Phishing is an email disguised to look like official communication from a legitimate source (e.g. a bank or credit card company) which is intended to fool users into providing personal information such as credit card details, passwords etc. It is important to know that no legitimate business will ever request that information through an unsolicited email.

Never double-click on an email attachment that contains an executable file with an extension such as .exe or .vbs. Don't download or open files from people you do not know or were not expecting to receive an email from. Some email systems, such as Google's Gmail, automatically scans all incoming emails and email attachments for viruses.

## Check Your Web Browser's Security Levels

Whether you use Internet Explorer, Mozilla Firefox, Google Chrome, or another web browser, always check the Internet security options that are provided by your browser:

1. Open your web browser.
2. Click **Tools**.
3. Select **Internet Options** in the dialog box that appears.
4. Click on the **Security** tab and adjust the security settings for your Internet use.

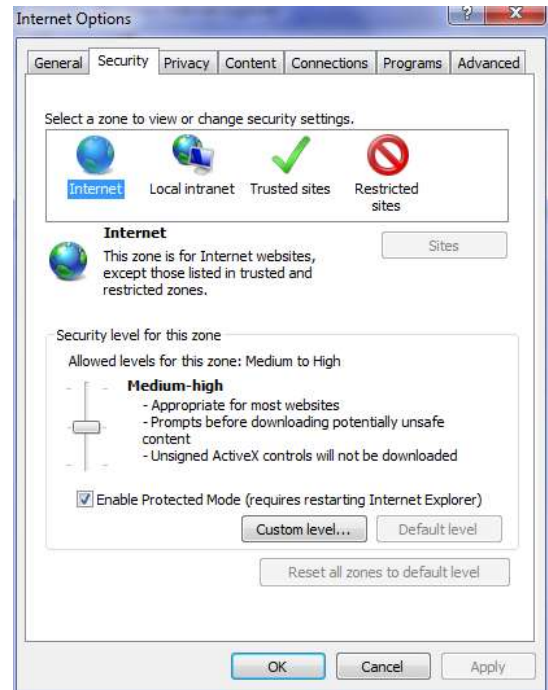




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How can you protect your computer from threats?

Setting security levels too high will filter out many websites and cause your search to be full of red flags and alerts.





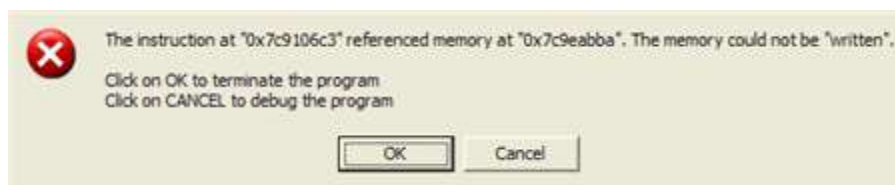
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What basic troubleshooting techniques can you use?

## Use Basic Troubleshooting Techniques

Most people have experienced a computer problem, and if you haven't, chances are you will at some point. Most problems are minor and can be easily fixed, so don't panic when computer problems happen. Instead, work your way through some basic troubleshooting techniques and try to solve the problem. Here are some general tips to keep in mind when you are troubleshooting computer issues:

1. **Check the cables, wires, and cords.** A majority of computer problems are related to an issue in the cables and connections. Checking these is the easiest first step you can take to troubleshoot most problems.
2. **Shut down and restart your computer.** Often this process will help the computer to correct and reconfigure itself. There is only one way to properly to shut down your computer and that is through the **Start** menu.
3. **Isolate the problem.** For example, if you can't get the cursor to move on the screen, try to determine if the issue is with the mouse. If you have an extra mouse, alternate devices to see if the one plugged in is the issue, or use the arrow keys on the keyboard to help determine if the mouse is the source of the problem. When trying to isolate the problem, only make one change at a time.
4. **Take notes about error messages.** If your computer gives you error messages, be sure to write down as much information as possible. If the basic troubleshooting steps don't work, you may need the information later on.



5. **Remember the steps you've taken, or write them down.** Once you start troubleshooting, you will want to remember what you have done so you don't repeat yourself and so you can share the information with others if you need outside help.

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What basic computer vocabulary should you know?

## Glossary of Terms

**Anti-Malware software** is a program that specifically looks for malware and is used in conjunction with an anti-virus program. E.g. Spybot, Malwarebytes

**Anti-virus software** is a program that protects your email, files and downloads against viruses, worms and Trojan horses. It checks for and removes existing threats from your computer and protects against new viruses if updated regularly.

**Cookies** are small files stored on your computer by your web browser. A cookie can be used for authentication, storing site preferences, shopping cart contents, the identifier for a server-based session, or anything else that can be accomplished through storing text data. They may be disallowed and/or deleted after each Internet session. Some Internet sites may not work if cookies are not allowed.

**Defragment (defrag)** is a process that reduces the amount of fragmentation in file systems. It does this by physically organizing the contents of the disk to store the pieces of each file close together. It also attempts to create larger areas of free disk space using compaction.

**Disk Cleanup** is a program that finds and removes temporary files and empties the Recycle Bin.

**External drive** is hard disk drive that attaches to your computer via a USB port (plug in) and is used for data storage and backups that can then be stored away from the computer for extra security.

**Google** is a popular Internet search program and is also used as a verb to mean search the Internet.

**Hard-drive** is a series of hard disk platters inside your computer that stores all your files and data.

**Mouse** is pointing device used to move the cursor and select objects on a computer screen.

**Phishing** is email disguised to look like official communication from a legitimate source (e.g. a bank or credit card company) which is intended to fool users into providing personal information such as credit card details, passwords, etc.

**Pop-Ups** or 'pop-up ads' are a form of web advertising that open in a new browser window while you are viewing web-sites.

**Spam** is unsolicited email or junk mail. Much of it is related to money scams or sexual content.

**Surge protector** is an appliance designed to protect electrical devices from voltage spikes.

**Spyware/Adware/Malware** are programs unknowingly downloaded from the Internet that collect information about a user without his knowledge and are often used to track browsing habits and create pop-up ads.

**Temporary files** are files that are created when you install software, operate programs, and surf the Internet. These files are not required long term and can clutter your computer and slow it down.

**Trojan Horse** is software that appears to be benign or desirable, tricking the user into allowing the program access to their computer either via a download or an email attachment.

### What basic computer vocabulary should you know?

**Virus is** a self-replicating program designed to infect a computer by rapidly spreading from one file to another, sometimes causing great harm and often slowing down the computer. Viruses are usually spread by copying or adding email attachments of infected files.

**Wikipedia is** an on-line encyclopaedia maintained by the general public that can answer any questions you pose. It is especially useful for computer vocabulary.

**Worms** are similar to a virus, but are spread over a network without human help.

#### References:

GCF Learn Free website: <http://www.gcflearnfree.org>