Computer Fundamentals

Day One Agenda:

1. Introduction (5 minutes)
2. Computer and peripheral devices (5 minutes)
3. Software (5 minutes)
4. Desktop (5 minutes)
5. Navigating through programs (5 minutes)
6. Word processing (20 minutes)
7. Mousercise and practice (45 minutes)

Day Two Agenda:

8. Review day one (5 minutes)
9. File management (5 minutes)
10. Copy, cut and paste (15 minutes)
11. Web browsing (30 minutes)
12. Practice, questions, and class evaluation (35 minutes)

In order to keep computer literacy programs running in the future, we must demonstrate its positive impact on our community. We would be extremely grateful if you would share with us the experiences you have had attending our training sessions and how our program has impacted your life. Please send your responses via e-mail or regular mail. Responses may be used to promote Utica Public Library and Mid York Library System as part of grant reporting.
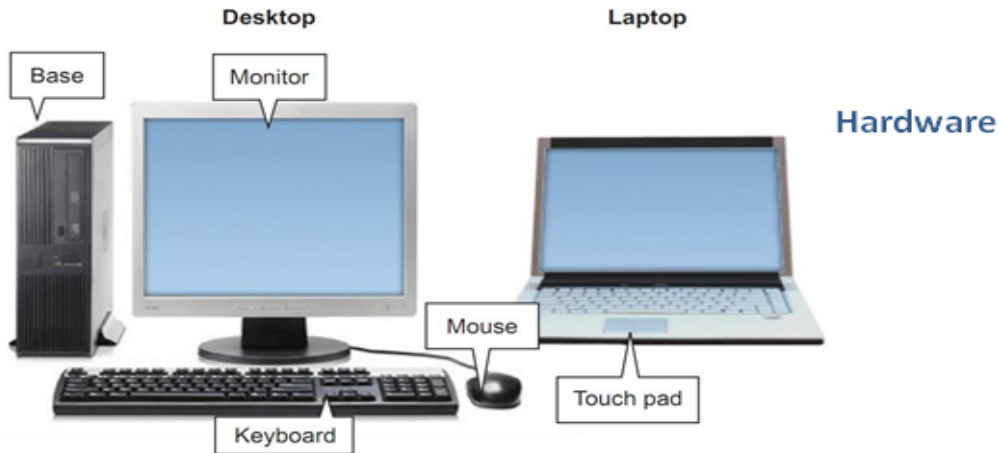*E-mail:* **sschultz@uticapubliclibrary.org**
Mailing Address: **Sarah Schultz, Utica Public Library, 303 Genesee St., Utica, NY 13501**

Table of Contents

Hardware

Base/CPU	The case that holds all the electronic components of the computer, including the hard disk, RAM chips, central processing unit (CPU), and motherboard. Inside the case is where everything takes place.
Monitor	Similar to a television, the monitor displays text, pictures, and other items from the computer on a screen.
Keyboard	The set of typewriter-like keys you use to enter information into or communicate with the computer
Mouse	The device that controls the movement of the pointer displayed on the screen. The Mouse lets you communicate with the computer.
Touchpad	Same function as a mouse and found on most laptops. Unlike a mouse, you can use two hands!
Laptop	Portable computers with the electronic component, monitor, keyboard and mouse all encased in a light-weight, battery-powered, portable unit which can fit on your lap. They are also sometimes referred to as 'notebooks.'

Software

Software means the same thing as Program or App (application). Whereas a piece of hardware is a mouse, keyboard, monitor, or digital camera, a piece of software is a program that runs on the computer. Examples of software include Microsoft Word and Internet Explorer. Software may come pre-loaded onto your computer or be purchased separately then downloaded.

Two key types of software:

- Operating System
- Applications Programs

The Operating System is the most important software program on your computer. Examples include: Windows 7, Windows 8, Windows Vista/XP, OS X, Linux, and Android.

- o Manages all other programs

- o Performs basic tasks, such as recognizing input from a keyboard, sending output to a monitor, and controlling external items like printers

- o Determines what *applications programs* you can run

Ports

A port is a socket in a computer into which a device can be plugged. Examples of such external devices: a flash drive, a mouse, a keyboard, a monitor, a printer, headphones, digital camera card.

***Port locations vary from computer model to model.

Security cable lock	Special locks may be purchased which are similar to bike locks
Power cord	Attach power cord here
USB ports	Stands for Universal Serial Bus. It is an outlet for connecting computers with electronic devices such as a flash drive, thumbnail drive, mouse, printer, etc.
VGA	Connects your laptop or desktop to a larger monitor or projector
Audio in	Attach a microphone here
Headphones (Audio out)	Plug headphones in here or speakers
PC card/ Smart card	Credit card with a built-in microprocessor and memory used for identification or financial transactions.
Media card slot	reads storage cards that most cameras, mp3 players, and cellphones use
CD/DVD drive	CD/ DVDs go here. You might need to push a button to get the carriage to come out or sometimes you simply push the CD/DVD into a slot
Ethernet	Allows user to connect to Internet with an Ethernet cord

Turning the Computer On

The power button's location is different on each machine model. It usually looks like this:
Depending on how your computer is set-up, you may have to log in with a user name and password.

If you are using a public computer in the library, the computer will already be on. You will just need to log-in with your library card number.

On desktop computers, there is a separate monitor power button. If your monitor is turned off, the screen will be black even if the CPU is turned on. The power button for the monitor is usually in the bottom right corner. If you had not manually turned off the monitor, you do not need to turn it back on. It will come on automatically when the computer boots up.

Turning the Computer Off

Left click on the Windows button, and then on the Shut down button.
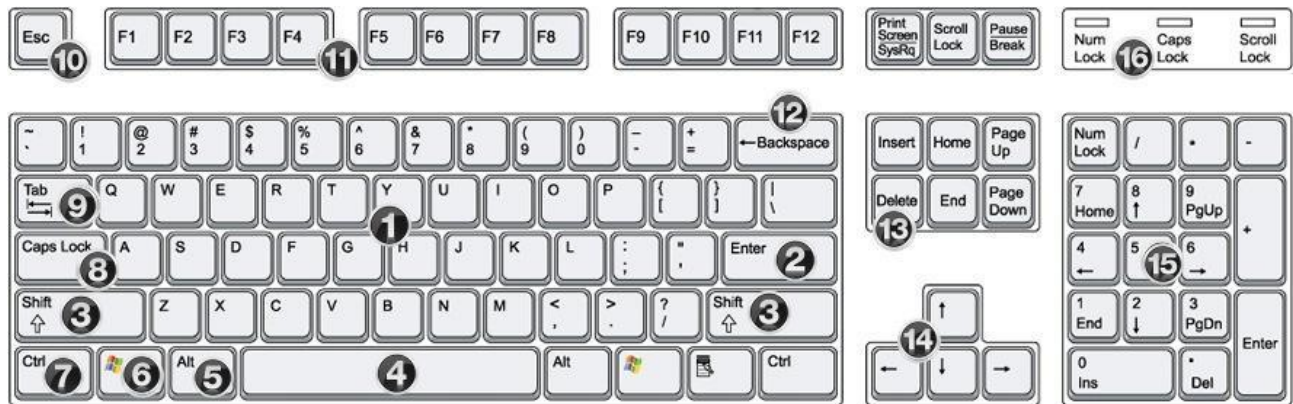
The computer will automatically shut down.
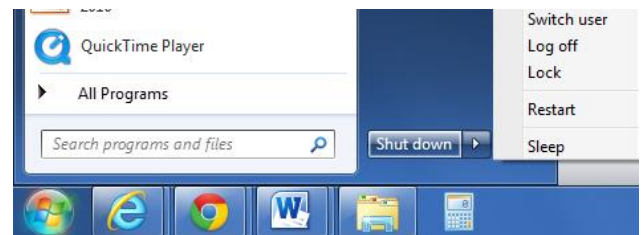
If you would like to do something other than turn the computer off, click on the triangle next to the Shut down button. Your other options include:

| Switch user	If you have multiple user accounts set up on your computer you can switch users without restarting your computer.
Log off	Choose this option to log out of your user account but keep the computer on.
Lock	Choose Lock if you want to walk away from your computer for a time. It will remain On and the programs you were working on will remain open. When you come back you will have to reenter your password to get back into your user account (if you have a password set up).
Restart	All of your programs close and your computer cuts all power. Then it turns itself back on.
Sleep	The computer maintains a fast state of readiness. Power is cut to the hard drive and monitor, but you are still using some power as your open programs are held open and ready for you to continue the next time you push the power button. You are up and running in seconds.

Keyboard

1	**Letters**	Letters are arranged in the Qwerty style, just as they are on typewriters.
2	**Enter**	Enter key performs a command, or as in a word document, brings cursor to the next line
3	**Shift**	Hold shift down and a letter makes an upper case letter. On keys with multiple characters, hitting the shift key will activate the top character. For instance, if you hit the "2" key, a 2 will appear. If you hold down the shift key and then the "2" a @ will appear.
4	**Space bar**	Moves cursor forward one space
5	**Alt**	Keyboard shortcut key
6	**Ctrl**	Stands for "Control" - important keyboard shortcut key
7	**Windows**	Opens and closes the Start menu
8	**Caps Lock**	This key will make ALL YOUR LETTERS CAPITALIZED until turned off.
9	**Tab**	Indent text or use the tab key to navigate the cursor between boxes or fields.
10	**Esc**	Exit from some screens
11	**F keys**	"F" stands for function. Function keys are programmable shortcut keys. The functions may differ depending on which software program you are using.
12	**Backspace**	Removes text behind the cursor; backspace can also be used instead of the back arrow on an internet browser.
13	**Delete**	Deletes text in front of the cursor
14	**Arrow keys**	Often called Cursor Control Keys, these four keys move the text cursor in the direction of their arrows. Above them are more cursor-control keys — the six-pack of Insert, Delete, Home, End, Page Up, and Page Down
15	**Number pad**	An alternative to using the number keys at the top of the keyboard
16	**Indicator lights**	When these symbols are lit up it means that the Number lock, Caps lock and/or Scroll lock is on.

Mouse and Touchpad

- You use the mouse and the touchpad to move the cursor around the screen and perform commands.
- To perform a command, press the left button. The right button will open up a secondary, popup or shortcut menu.
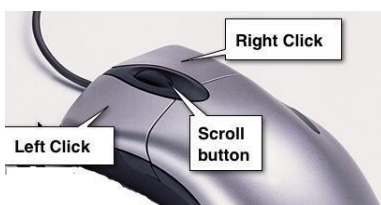
Clicking

One of the most difficult things to learn when starting with computers is how to use the mouse. It takes coordination, finesse, and precision. Fortunately, every time you practice, you will get better.

Remembering when to single-left-click, double-left-click, or right click is challenging. For now, remember these rules:

1. The LEFT mouse button SELECTS items and opens hyperlinks on the Internet
2. The RIGHT mouse button GIVES YOU MORE OPTIONS
3. Double-Clicking the LEFT mouse button EXECUTES options – like opening a shortcut on the desktop
4. Double-Clicking the RIGHT mouse button DOES NOTHING

The Cursor

The icon your mouse cursor appears helps you determine your options at any given point on a computer. For example, if your mouse pointer looks like a hand, it means you are hovering over a link that will connect you to another page. Select, or a white arrow, is the form your cursor will most frequently take. You move this arrow to a location to "click" on something that will perform an action.

Text Select	appears when you are in a location where you may enter text
Link selector	lets you know that if you click a link will open
Resize	options allow you to make windows or images larger or smaller by clicking and dragging
Busy	means the computer is working and you need to wait for it to finish. In older computers, this symbol is an hourglass.
Working	means the computer is working but you should still be able to perform other tasks
Unavailable	will appear when you try to use your cursor in a location where you are not allowed to take action

Desktop
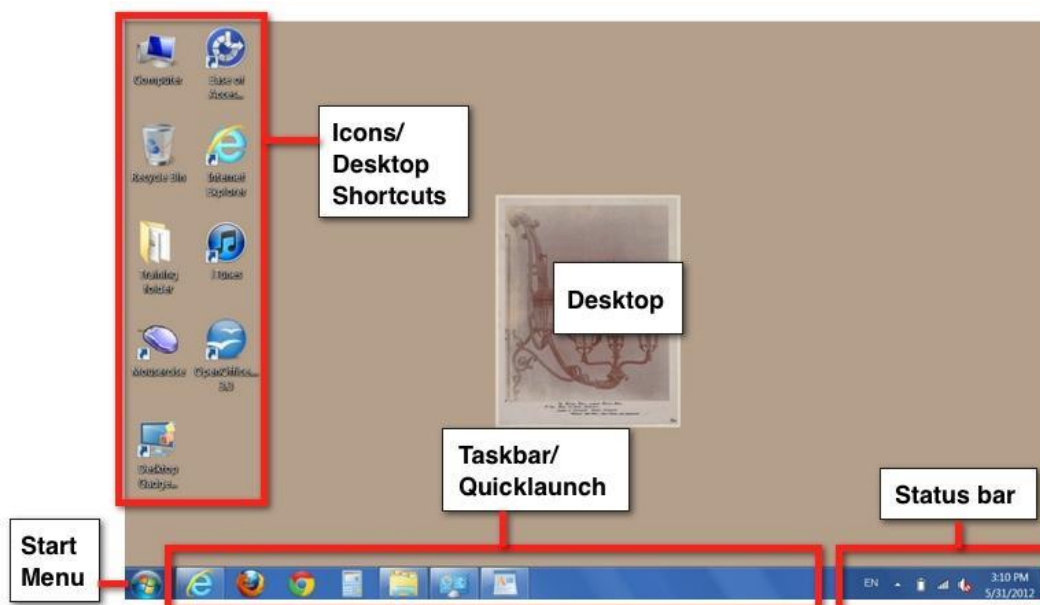
The desktop is your work surface. It is the screen you see once your computer has finished booting up and you are ready to get started.

The small pictures are shortcuts to programs called icons. Double-click icons on the Desktop to start a program. Left-click once if the icon is in the Task Bar at the bottom of the screen. Clicking the Start button also shows a list of programs. The blue bar across the bottom of the screen is the Task Bar. Here you can see the clock in the far right and also what programs are open on your computer.

Task Bar

Microsoft Windows is capable of running more than one program at once. In other words, you can write a letter in Microsoft Word, while surfing the Internet, and using Microsoft Excel to create a spreadsheet at the same time. This is called multi-tasking and is a feature of all personal computers.

To find out the programs running at once, check out the blue Task Bar at the bottom of your screen.

Windows 7 Task Bar:

In Windows 7, programs that are open appear in 3-D (they are outlined and look raised). In the Task Bar above, there are five programs open. Even though there are eight icons pictured, not all of them are in 3-D. To open the application to see what is running, simply click on it OR you can hover the mouse pointer without clicking to view a small preview of the program. Note: The Task Bar probably looks different than the one shown above. That's OK. You can pin whatever program you want by finding the program under the Start menu, right-clicking on it, and left-clicking on "Pin to Taskbar."

Hover the mouse over an icon to preview a program:

Start Menu
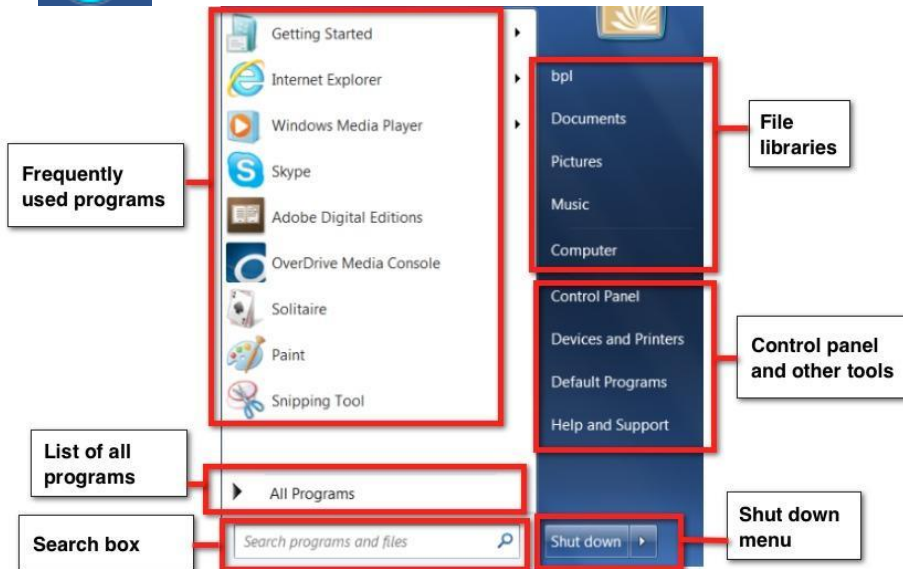
The Start Menu is located in the lower left hand corner of the screen.

The **Start Menu** has many uses. It's one way to open a program. Other uses of the Start Menu include:

- **Search box-** you can quickly search your computer for files and programs
- **Control panel** – has many uses a few of which are:
    - Change wallpaper
    - Adjust mouse or keyboard settings
    - Adjust monitor settings
    - Change security settings
    - Defrag disc
    - Change network settings
- **All Programs** lists every program installed on your machine.
- **File libraries-** These are the default file folders your computer comes with. Files you create may be stored here.
- **Computer (or My Computer)-** See all the drives on your computer and see any external devices attached to your computer

Opening and Closing a Program

- Double click the icon on the desktop for the program you want to open.
- Click on the white X in the red box in the upper right corner of the window to close it.
- If you have trouble double clicking, click once on the icon for the program you want to open, then hit the **Enter** key on the keyboard.
- You can also close a program by clicking on the word **File** in the top left corner of the screen and then on **Close/Exit**.

Using the "Filing System"

Once you start using the programs on your computer, you can save your work. Each piece of a saved work is called a "file" or a "document." Like in real life, you can organize these files into folders.

Just as some people keep an organized file cabinet and others keep a messy one, your computer will reflect your sense of organization.

Most people keep their files organized in their "My Documents" folder. Sometimes there is a shortcut to it on your desktop, if not, it can always be found in your start menu under the "Documents" option. Once inside "My Documents" you can either save all your files or documents in one big pile, or you can make separate folders for categories (for instance, a folder for family, work, financial records, etc.).

To view "My Documents" in Windows 7

2. Click on Documents

1. Click on Start
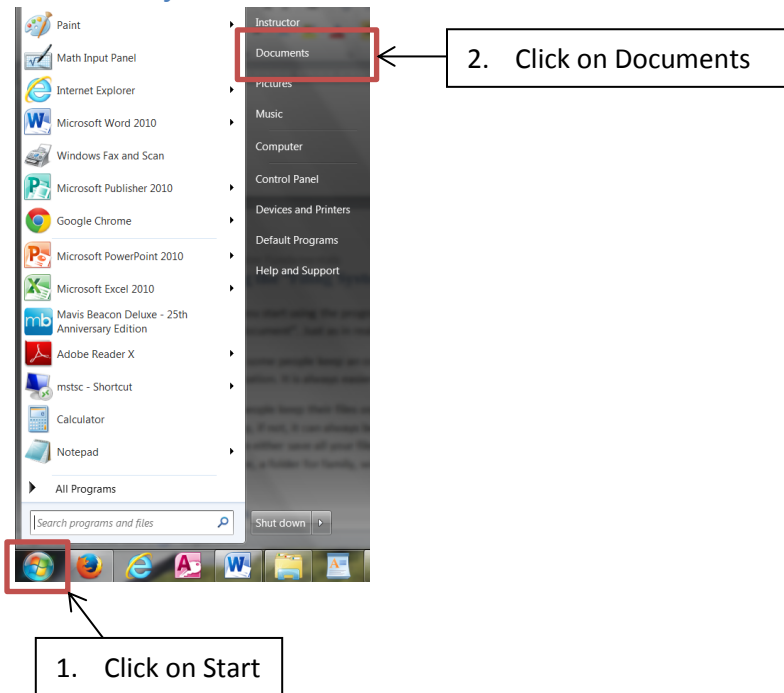
To create a new folder:

While in "My Documents" (see steps above), click on "New Folder". A new folder will appear. The name will be by default called "New folder", but it will be highlighted in blue ready for you to rename it. Once you name the new folder, you may double click on it to open.

Location within filing system

Click on New folder to create a new folder

Other places to create folders
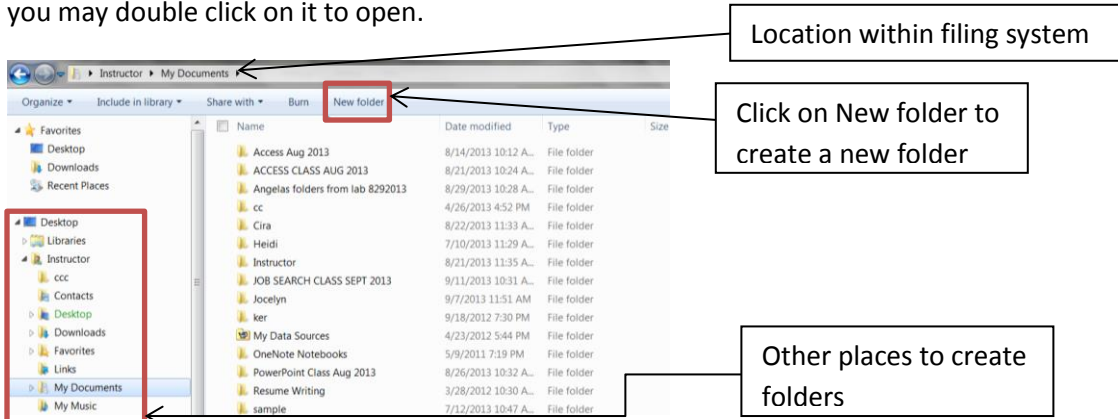
Put an existing file into a folder

1. Find the file you want to move into a folder
2. Right click on the file (a menu will appear) then left click on "Cut"
3. Find the folder you want to put the file in
4. Right click on the folder, then left click on "Paste"

Variation: Click and drag the file into the new folder. You will see the outline of the file icon move as you drag it. Once you are over the chosen folder and it is highlighted in blue, release the file into it. Be sure you don't drop the file into the wrong folder – it can be tricky to find when this happens.

You can also save a file directly to the folder of your choice. When you are ready to save the file/document, choose "Save As." Navigate to the correct folder, name the file, and click on Save.

Copy, Cut and Paste

Copy and paste is a very useful tool if you want to move information from one program to another. Copying text or an image creates a copy and leaves the original. Cutting takes the original in order to move it somewhere else. There are a few ways to copy, cut, and paste. Try highlighting the desired text/image then:

- **Right click** over the highlighted section (be sure that everything you want copied is highlighted), and select Copy. Nothing will appear to happen, but a copy of the highlighted section is saved to a digital clipboard. Go to Microsoft Word, and right click again. Under Paste Options there will likely be 3 clipboards. The paste options are described below. The first clipboard (paste and keep formatting) is most often used. After you select one of the clipboards, your previously copied material will appear.

Paste & keep source formatting

Paste & keep text only

Paste & merge formatting
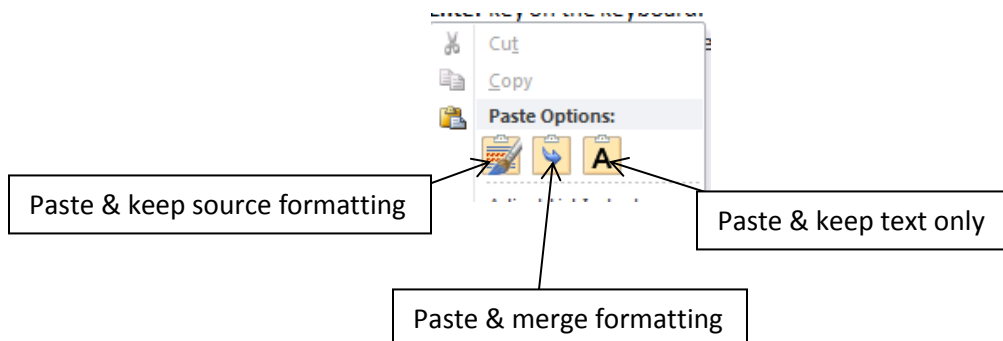
- Another way to copy, cut, and paste is by using keyboard shortcuts. After highlighting the desired text/image, hold down the **Ctrl** button and press the letter **C**. You just copied the section. To paste it, go to the program you want to paste (such as Word), hold down **Ctrl** again and press **V.** This should paste what was copied.

    Keyboard shortcuts

    Copy: Ctrl C

    Cut: Ctrl X

    Paste: Ctrl V

Internet Browsers

The Web uses browsers to connect you to web pages that are linked together with hyperlinks. The most popular browsers are shown below. Browsers provide a friendly user interface to view data transmitted over the Web. In order for your browser to display a web page, it **requests** the data from the server where the page is stored. The server processes the request, and then sends the data to your browser where it is displayed.

Popular Internet Browsers

Search Engine Overview

If you need to find information on the Web and don't know which website to go to, then a search engine will be your best friend. A search engine (like Google, Bing, or Yahoo!) is a program that searches the Web. No search engine searches the entire Internet – there are just too many web pages! Instead, search engines have automated programs called "spiders" that crawl through the Web collection information on websites then return to the search engine's database. It is all quite mysterious the algorithms that calculate which websites appear on top on search engine results. Each search engine has their own algorithm and databases so that is why you may get different search results depending on which search engine you use.
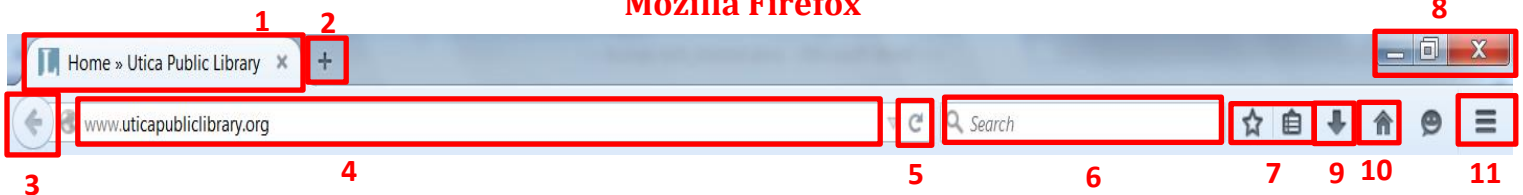
google.com
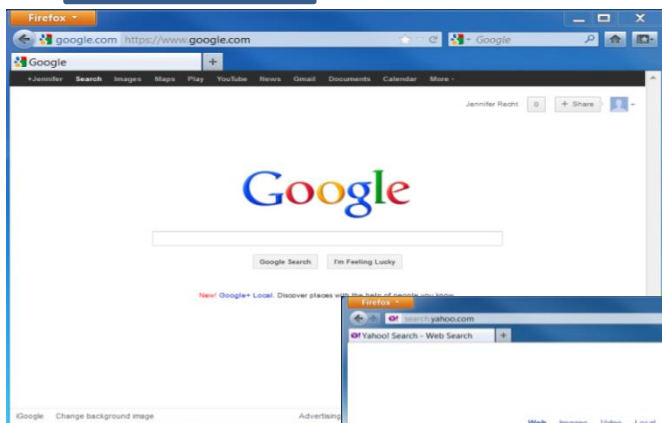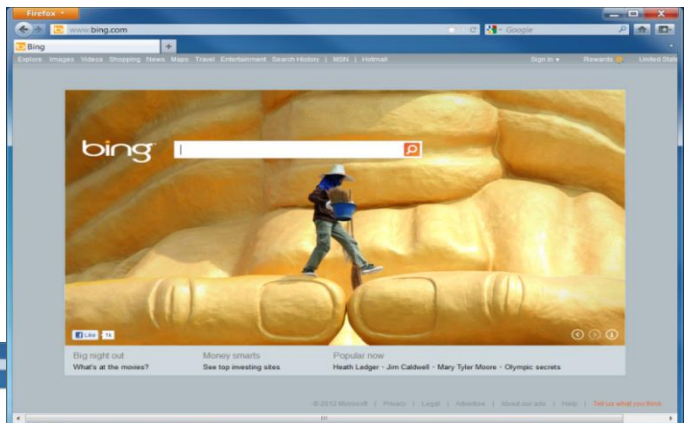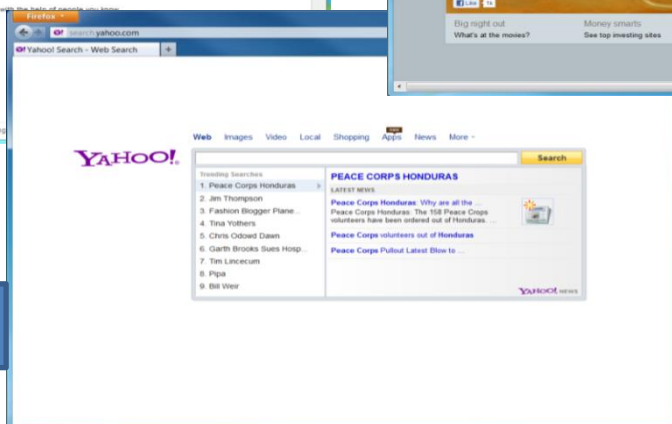
bing.com

yahoo.com

Navigation buttons

Sometimes after you click on a link, you may want to go to the previous page. You can go back to the page you were before by clicking on the back button. The forward button will take you to the link again.

Scrolling Tips:

You can use the scroll bar to view parts of the web page not seen. You can also press the "Page Down" or "Page Up" buttons on your keyboard. If you have a mouse, there is sometimes a scroll ball in the center in between the left and right buttons.

Mozilla Firefox

Mozilla Firefox Layout		
1	Open tab	The open tab will display a title of the web page you are viewing. Click x to close.
2	New tab	Click + to open a new tab and keep the current web page available.
3	Navigation arrow	Click the left arrow to return to a previous web page. Click the right arrow to go forward one web page.
4	Address bar	Insert a website address here. You no longer have to type www at the beginning. Example: type **google.com** to go to Google's website.
5	Refresh	The refresh button will reload the current web page.
6	Search engine search box	Type keywords into this search box to reveal the search engine's "hits". This is an easy way to find a website that you don't know the exact address.
7	Bookmarks	The bookmark button will save the web page you're currently on. Click the star to bookmark the web page. Click on the star a second time to designate where the bookmark is stored. The Bookmark Toolbar is the most obvious location. Click on the clipboard icon to show all bookmarks.
8	Minimize, Restore Down/Maximize, Close buttons	Minimize will shrink the window to the bottom task bar. The program is still running – it is just out of the way. Restore Down/Maximize will either shrink the window to a smaller size that you can move and resize or restore it to full screen. The close button will close the browser.
9	Downloads	Click here to view files saved from the Internet.
10	Home	Clicking the home button will return you to the start page of the browser.
11	Menu	Click the menu icon to see more options including: view browsing history, print, zoom, copy/cut/paste, change home page, and more.

URL

To get to a web page you can enter a URL (Uniform Resource Locator), also known as a web address. The URL tells the web browser where to find a web page. Most people find a web page by search terms in a search engine.

Example of a URL
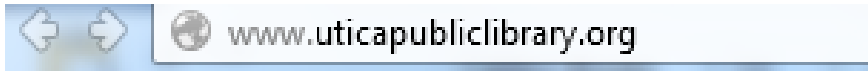
Search Bar

Some browsers have a built-in search engine search box to perform web searches. Other browsers have combined the URL address bar and the search engine search box into one so you can search with a website address or search terms in one box.

Search Engines and Strategies

You can either enter search terms in the search bar or go to a search engine's website and enter terms into their search box. Many new browsers like Chrome allow you to enter search terms in the address bar and take you directly to a search engine's list of results.

Search box – type keywords for a new search

Search results – click on the blue title to visit

Scroll bar – click and drag to view top and bottom parts of page

Ads: Google has to pay the bills too. Sometimes ads appear at the top of your search results.

Search engines cannot read your mind. If you are not receiving helpful results, try different search terms and be specific. Use words that your ideal website would use. If you are looking for a comfy office chair to buy, try "buy ergonomic chairs" instead of "comfy office chairs". The search engine cannot tell the difference between homonyms like "Polish" the language and "polish" you use on a shoe.

Search tips

- **Search phrases**. Put quotes around a phrase so each word in the phrase isn't searched for separately.
- **Take suggestions**. As you are typing search terms, the search engine will try to guess what you're looking for based on popular related searches. A list of search suggestions will appear as you are typing in the search box. These suggestions can provide ideas of what terms to use that you may not have thought of before. It also may give you spelling suggestions.

Suggestions
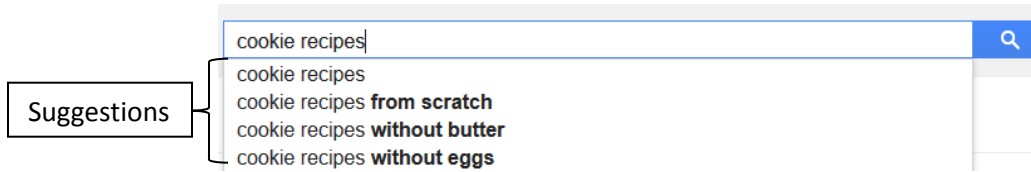
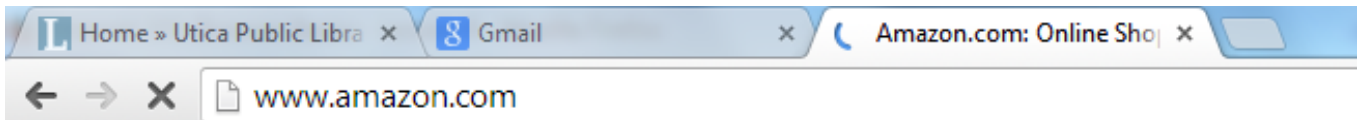**Keep it simple**. Don't use sentences. Search with specific keywords or phrases.

Specialized Searches
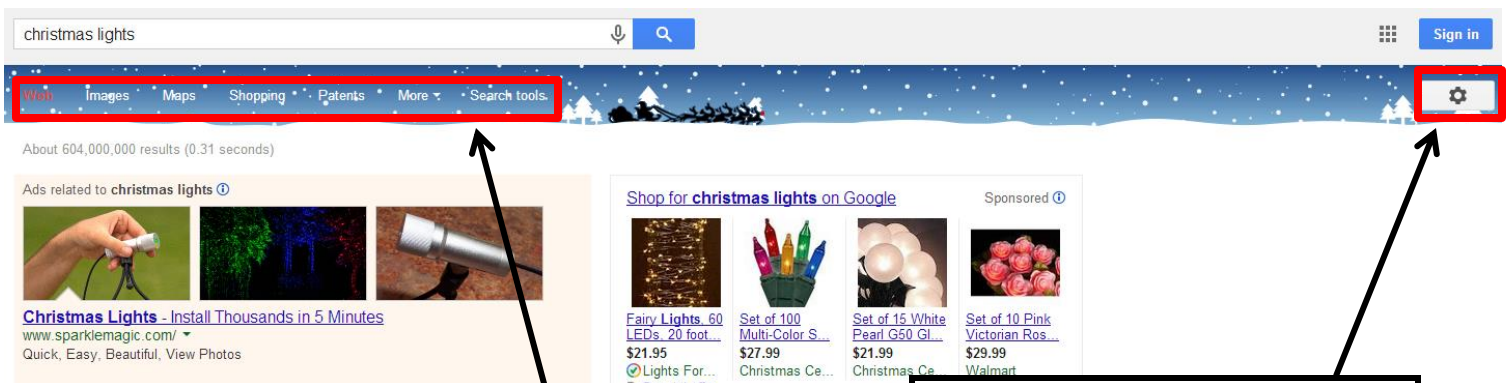
Are you looking for pictures, maps, shopping? After you search, you can narrow down your results by clicking on one of these categories.

Click here to do an Advanced Search.

Advanced Searches allow you to narrow down your results.

Tab browsing

Working on multiple tabs allows internet users to multi-task and have more than one web page open at once without crowding the screen.

To open a link in a new tab, **right-click** the link and click **Open in new tab** (the wording may vary from browser to browser). To close a tab, click the "X" on the tab.

You can also use the keyboard shortcut command Ctrl **T** to open a new tab. To do this, hold down the Ctrl button and press the letter T on your keyboard.

Troubleshooting FAQ

Can I leave my computer on all the time?

Generally yes. If you use your computer frequently throughout the day then you will want to keep it on. You may want to at least turn your monitor off to prevent screen burn. However if you are on your computer for an hour or two per day then to save power and keep your machine cool you should turn it off when you are finished. You may also want to see other options on page 5.

What should I do when everything freezes and the mouse and the keyboard don't work?

First, make sure the mouse and keyboard did not come unplugged from the back of the computer. If that is not the problem, try pressing the ESC key in the upper left corner of the keyboard. You can also press CTRL+ALT+DELETE to open the Task Manager, click on the program that is not responding, and then click on End Task. If nothing seems to help then you will have to re-start your computer (and you may lose whatever you were working on).

The computer is on, but the screen is blank.

Check to be sure the monitor is turned on, plugged in, and connected to the computer. If the computer has not been in use for several minutes a screen saver may have started. Jiggle the mouse or press the space bar to stop the screensaver.

Suddenly while I was typing EVERYTHING CAME OUT IN CAPITAL LETTERS.

You probably pressed the Caps Lock key on the keyboard by mistake. Press it again to turn off the caps lock.

Suddenly while I was typing the words that I am typing are replacing other words.

You probably pressed the Insert key by mistake. Press it again to turn off Insert and stop typing over existing text.

Additional Resources

Basic Computing Skills:

http://www.gcflearnfree.org/computerbasics

http://askabbystokes.com/

Typing:

http://www.powertyping.com/

http://www.gcflearnfree.org/typing/play

Practice using the Mouse:

 http://www.pbclibrary.org/mousing/mousercise.htm

Glossary

Apps	Stands for Applications. Applications are software programs.
Back up	Make copies of files
Blog	Short for Web log, a blog is a Web page that serves as a publicly accessible personal journal for an individual.
Boot	Startup computer
Browser	Program for reading information on the Internet: Internet Explorer, Mozilla Firefox, or Safari
Cursor	Movable indicator used to indicate the insertion point
Database	Collection of related data organized for convenient access
Desktop	Starting screen for Windows or Mac
Dock	The bar of icons that sits at the bottom or side of your screen. It provides easy access to some of the Apple applications on your Mac
Download	Transfer information from one computer or website to your computer
Drop-down menu	A menu of commands or options that appears when you select an item with a touchpad or mouse
Email	Electronic mail send through the Internet
File	Any amount of information stored together as a single entity
Flash drive	A removable file storage device

Folder	Storage unit for one or more files
Hardware	The physical machinery and devices that make up a computer system.
Home page	First page of a website
Icon	Symbol or picture depicting a command or application. Usually a short cut.
Internet	A global network connecting millions of computers and users
Invisible web	Also referred to as the *Deep Web*, the term refers to either Web pages that cannot be indexed by a typical search engine or Web pages that a search engine purposely does not index, rendering the data "invisible" to the general user.
Keyword	Descriptive word used to locate information
Links or hyperlinks	A link to move from one web page to another or to include a web address in an E-mail
Log off	Closing a session on a computer, Internet or website.
Log on	Typing in a username and password to gain entry to a computer or the Internet. Also many websites require users to log on as well.
Menu bar	A row of commands usually in the top left hand corner of the screen, which are specific to the program you are using.
Mouse	A pointing device, which controls the cursor
Online	Connected to the Internet
Operating system	The software that allows computer users to run applications with the hardware of a specific system. Microsoft® Windows® or Apple® Computer's OS are examples of operating systems.
Reboot	Restart computer, usually after a problem
Scroll bars	There may be vertical and horizontal scroll bars. Scroll bars allow you to view information that does not fit on the screen.
Search engine	Online software used to search for information on the Internet, for example Google
Sleep	An energy-saving mode of operation in which all unnecessary components are shut down
Software	The programs and other operating instructions used by a computer

Task bar	Open programs or applications appear in the Task bar, located at the bottom of the screen. You can use the Task bar to switch between open programs. When you close a program the name button for that program disappears from the Task bar.
Tool bar	Consists of rows of icons or buttons used to carry out specific and commonly used commands, such as printing.
Touchpad	A computer input device for controlling the pointer on a display screen by sliding the finger along a touch-sensitive surface
Upload	To transmit data from a computer to a bulletin board service, mainframe, or network.
URL	Stands for "Uniform Resource Locator." Identifies the address for a website
Username	Name assumed to identify oneself.
Web page	A document connected to the World Wide Web and viewable by anyone connected to the Internet who has a web browser
Web site	Sets of web pages on the Internet
Windows	The Microsoft operating system
windows	An enclosed, rectangular area on a display screen.
World Wide Web	Sets of interconnected multimedia documents on the Internet