

# Internet Basics



## I. About this class

Using the Internet is a basic skill now expected in all workplaces and in our lives outside of work. Whether using apps on a mobile device, shopping online on your laptop, or applying for jobs using a public pc, you are interacting with data from the Internet. This class focuses on using an Internet browsing tool on a pc or laptop to access the World Wide Web and find the information you need.

## II. About the internet

### A brief history:

The **internet** began in the 1960s as a collaboration between industry, universities, and the Department of Defense to create a structure to share information resources. By the 1990s the Internet had become a global “**network of networks**” linking computer systems globally over telephone, electronic and fiber-optics lines, and now wireless connections. The **World Wide Web** is the part of that huge network that shares information using text, images, sound, and video using a common computer protocol to transmit the information, and a system of addresses called **URLs** to locate the information.

### How can I use the World Wide Web?

In 2000, 56% of US adults were using the Internet. In 2021 that figure had risen to 93%. Even if you are not a daily Web user, you are probably aware that the Web connects individuals through social media, email, and messaging systems. Web technologies allow you to do everyday business such as shopping, using a calendar, applying for jobs, submitting your income taxes, making medical appointments, banking and paying your bills, and applying for services. The Web allows you to find and enjoy recreational sources such as music, movies, reading. You can now complete your education completely online, and working from home over the Internet has become the norm for some workers.

### How do I access the Internet?

**You need hardware—a computer of some kind.**

A cell phone, tablet device, a laptop or pc. And you need the **software** that runs your hardware and your programs behind the scenes.

**You need a connection that joins your computer to the Internet.**

This can be hard wiring to phone or other electronic communication lines. This can be a wireless connection, like **wifi** or **cellular data**. Those connections are provided to you, or the location where you are working through an **ISP**—an internet service provider, and you know many of the most popular providers by name—Comcast, Xfinity, T-Mobile, ATT, etc.

**You need a software tool that allows your device to understand and display Internet data, and lets you interact with it.**

For your mobile devices, like your smart phone, your banking “**app**” or your weather app or your social media apps are the software that connect your device to the specific location on the Internet where the data for that app is stored. If you are using a laptop or pc, you will most likely connect to and use the Internet and the World Wide Web through a tool called an internet “**browser**”. An internet browser tool connects your computer to the Internet, and then is able to bring in data from across the entire World Wide Web and format it as text, images, sound, video, and links to other information that you can interact with.

### III. Working with a browser

**A browser is just a software tool. A browser’s purpose is to display web pages.**

You probably have already seen a screen on a computer somewhere, or even on your own mobile device, that displays some information from somewhere on the Web, and maybe not even been aware that you were looking at an internet browser. As with all tools to do a job, there is more than one kind (and brand) of browser that does the job. DeWalt, Bosch, Milwaukee, Ryobi, Black & Decker all manufacture and sell power drills. There are differences between them, but they are more alike than they are different, and that is true of Internet browsers, too. Some popular current browsers available at the Library are:

- Google Chrome
- Microsoft Edge
- Mozilla Firefox



Other popular browsers

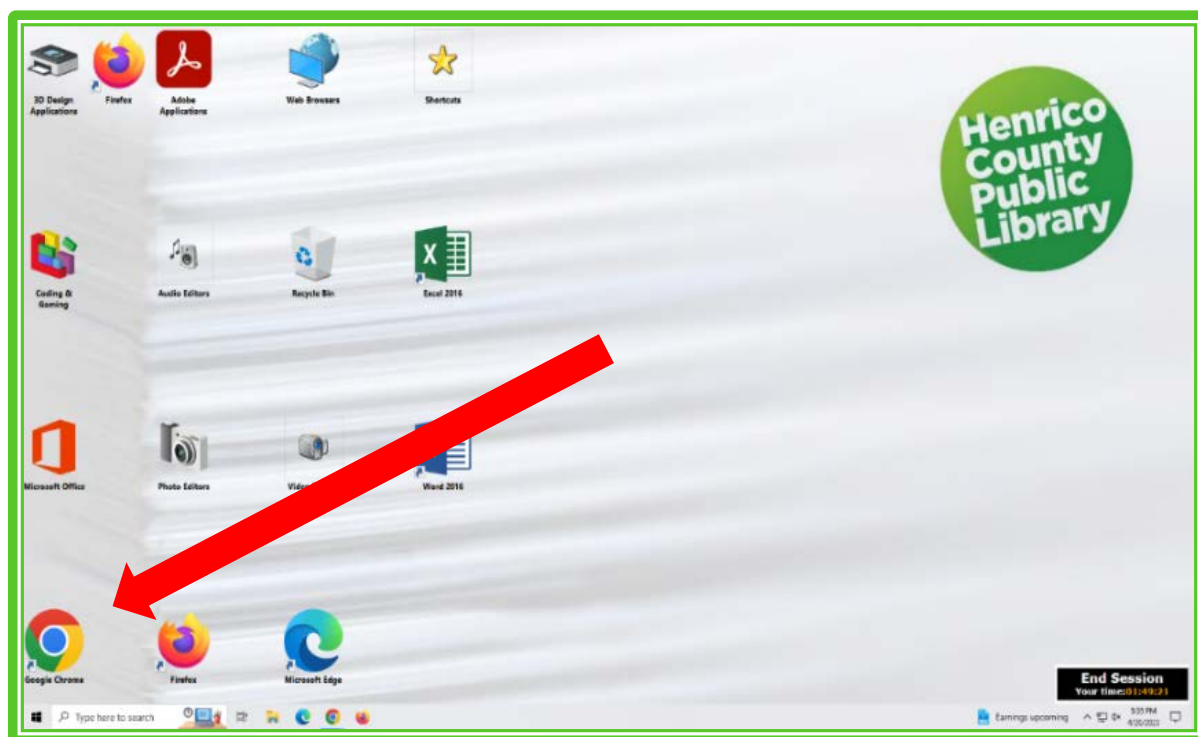
- Apple safari
- But there are many more.

## IV. An exercise—becoming familiar with your Chrome browser

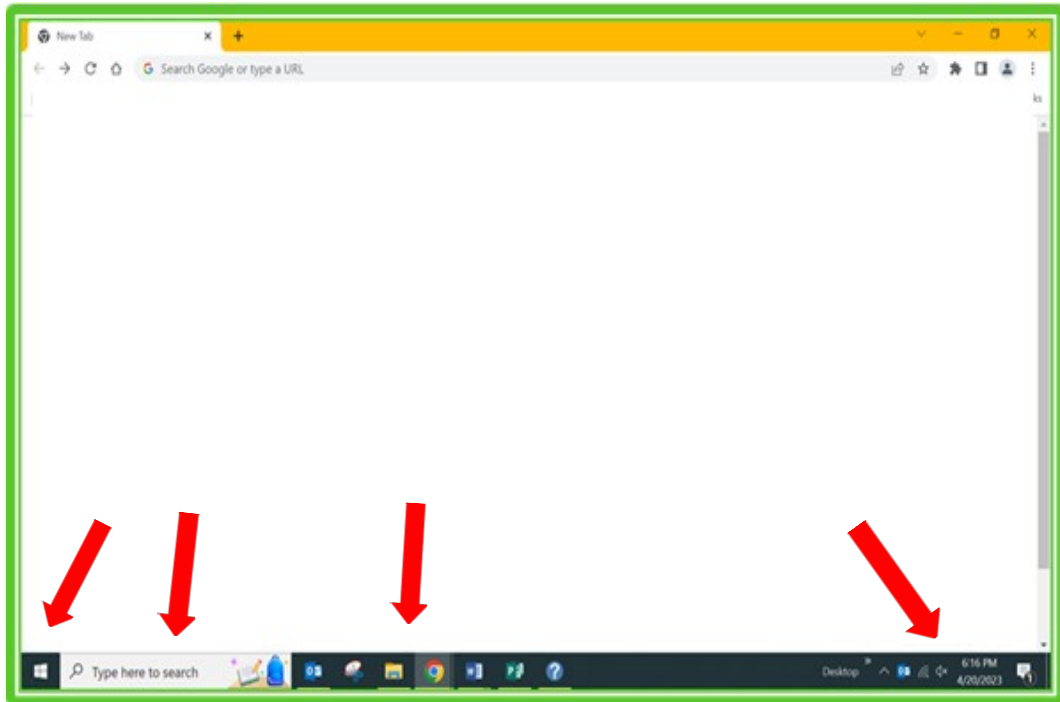
**Our first exercise—locating and opening the browsers on the pcs in the DML.**

Chrome, the browser developed by the Google Corporation, is currently the internet browser that is recommended for use in Henrico Libraries, but we also have other browsers available for your use. We are going to open the Chrome browser and use it to take a tour of an internet browser and see what features and tools it offers to allow you to use the information on the World Wide Web.

This **screenshot** shows what you may see on YOUR pc's **desktop** here in the Library's DML. You should see **icons** that link you to all the software program on the DML computers. The icons representing three internet browsers are on the bottom row, Google Chrome, Mozilla Firefox and Microsoft Edge. **Use your mouse to double-click on the icon for Google Chrome.** (Your pc's desktop may look different.)

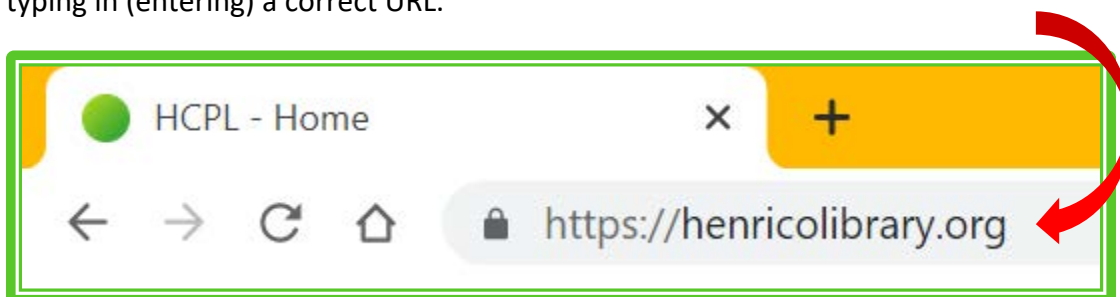


This image shows a screenshot of a Chrome browser window, without any content. The browser window you just opened will probably show content, possibly the Library’s website or an internet search screen. We are going to focus how the browser works rather than the content you see for now. At the bottom, you can see your computer’s **start button**, **search field**, **task bar**, and **systems tray**, which are NOT a part of your browser—they are part of the computer’s operating system.

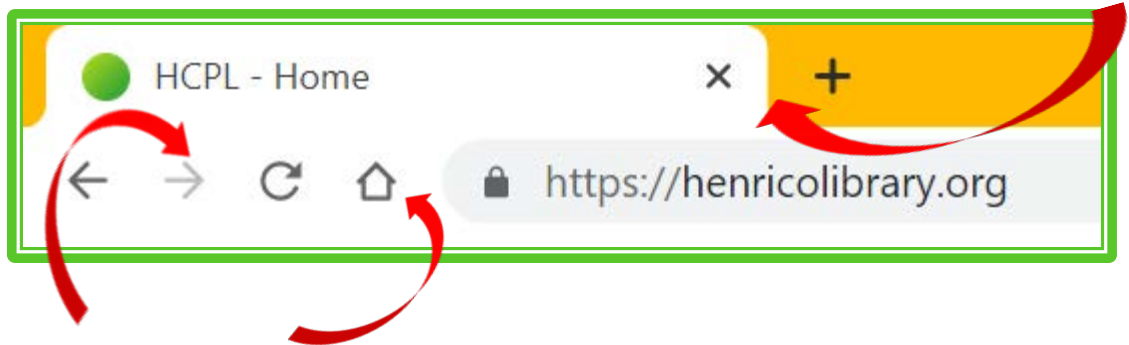


## V. Browser Terms and Tools to know

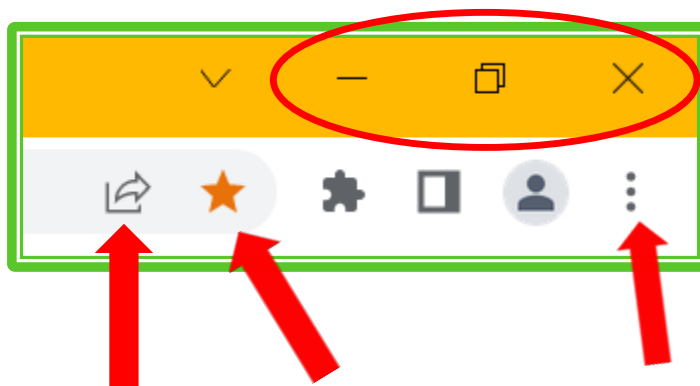
- A. **The address bar.** All the data that you can find on the World Wide Web has a unique address called a URL. The accuracy of finding what you are looking for depends on your accurately typing in (entering) a correct URL.



- B. **Tabs.** Tabs allow you to have more than one page of information “open” at one time, and you can switch between them. Click on the plus sign to open a new tab, and click on a tab’s x to close that tab.

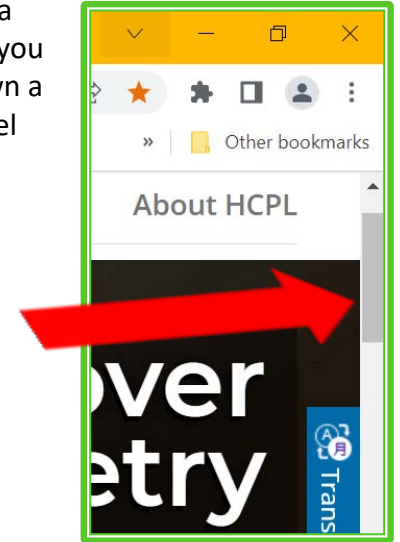


- C. The **Home** Button. The Home button takes you to the main “landing” page of a website, or to another page that has been set up as the main page on the computer system you are using. You will probably see the Library’s webpage when you click on the Home button in the DML.
- D. **Go back** a page, **go forward** a page, **refresh** a page buttons. Back and forward move you through recent web pages you have viewed. Refresh asks the browser to reload the information on a page again—to update any information on that page that might have changed, or in case the information for the page does not load quickly.
- E. **Minimize, resize** and **close** buttons. Minimize will move your browser off your computer screen temporarily, but it will still be active—you can find it again by checking your tool bar.



- F. **Share this page, bookmark this page,** and advanced browser **settings.** Share this page allows you to copy the link to this page’s URL to share somewhere else, for instance, in email. Bookmarks allow you to save a quick link to a page you may use frequently, and the advanced browser settings are additional tools you can use as you gain more experience.

- G. Your **scroll bar**, for moving up and down a page. You may also have a horizontal scroll bar across the bottom of your browser, if the page you are looking at is very wide. Note that you can also move up and down a web page using your mouse's scroll wheel, if your mouse has a wheel feature.



## VI. Why is the address bar so important?

The address bar is one of the most important parts of a browser, because the information you type in it determines what you are going to find on the World Wide Web. Web sites for specific people, corporations, institutions, etc. have very specific web addresses, and even a small spelling mistake can make the difference in whether you find the information you want or not. When the Web first came into common use, you had to type an address very precisely and completely into the address bar. Let's look at a complete web address, technically called a URL—a uniform resource locator.

**<https://www.henricolibrary.org/events>**

**http:// or https://** stands for **Hypertext Transfer Protocol** and **Hypertext Transfer Protocol Secure**. It is the part of a URL that directs your computer to find a specific page on the Internet, and to display it as a user-friendly web page. The <s> for <secure> denotes that the website you are working with has taken extra precautions to make sure your data is safe with them.

**www.** of course stands for WorldWideWeb, and it tells your browser that the information is on the Web, and not some other part of the Internet.

**henricolibrary.org** is the specific address, made up of the **domain name** which specifies the organization or entity that the site belongs to, and the **top-level domain**, which tells you the type of organization the website is registered to. The top-level domain ".edu" specifies that page's data originates from an educational institution, ".org", from a nonprofit, ".com" from a commercial or business individual, and ".net" from a network of data.

**/events** and other strings of characters after the top-level domain, are called **directories** and represent subsections or specific pages within the website.

Most browsers do not require you to type that entire URL (although they did in the past). You can omit the `https://` and even the `www.` and your browser will find the correct website for you.

SPELLING matters when typing in URLs, and URLs cannot contain spaces.

## VII. Address bar exercises

Try some exercises. First, let's focus on typing URLs in the address bar.

1. Using the address bar, type the website for the IRS, the US Internal Revenue service. Its domain is `irs.gov`. First, type the complete URL `<https://www.irs.gov>` and then try `<irs.gov>`.
2. Type in `<irs.com>`. How is what you see different, and why?
3. Type `<richmond.edu>`, `<richmond.org>`, and `<richmond.com>`. Note the differences.

Focus on using browser tabs.

1. Use your mouse to open a new tab in your browser window.
2. Now type `<henricolibrary.org>` in the address bar of this new tab.
3. Practice clicking on the two tabs you have open to move between the two.
4. Close your second browser.

Moving through browser pages.

5. Using the first tab you opened, use your browser's back and forward buttons to note how you are moving through the pages you have just seen in THAT tab.
6. Find and use the scroll bar to move up and down through any page. Experiment using your mouse's scroll wheel to move up and down.
7. Use the minimize and resize buttons at the top right to change the size of your browser window. What is the difference between using the minimize button and the close button?
8. Use the Home button, and note the page that appears in your browser.

## VIII. About autofill/autocomplete

### Autofill and the using the address bar for searching.

As you were working in the address bar, did you notice that as you typed, a list of suggestions below the address bar popped up? This called **autofill**. The browser is making guesses/suggestions about what you may be looking for—they may or may not be what you want!

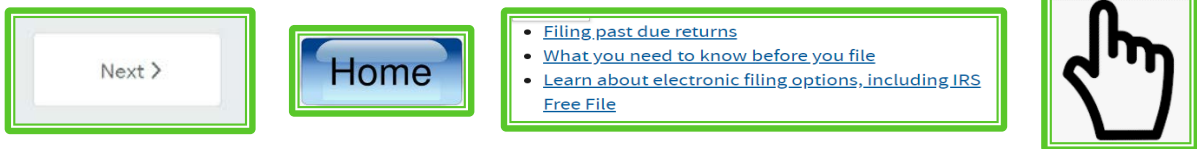
**Try this exercise.** Being typing in <irs.gov> again and while you are typing, notice if you get autofill suggestions and whether they are what you want, or not. Your browser may also automatically type one of those suggestions into the address bar as you are typing. If you don't want to accept the suggestion, you can hit backspace, and continue typing what you wanted instead.

Browser address bars can also function as a tool to search the Web for information, not just to find specific web addresses, and we will talk about that later in class.

## IX. Hyperlinks

### Using hyperlinks to navigate through web pages.

One of the most revolutionary characteristics of the development of the World Wide Web was the use “**hyperlinks**”. Everyone has seen a command to “click here”. When you click on specific text, or sometimes images of symbols like icons, the text has been formatted using coding called **hypertext** to take you somewhere else—a different spot on that page or a different page. Hyperlinks, also just called links, are often formatted in some special way—underlined or in a different color—so that you can recognize them. You can also locate hyperlinks using your mouse pointer.



### An exercise.

Using one of the browser tabs you have open, or open a new browser tab. Find Henrico Library's web page. Its URL should be <henricolibrary.org> and you should see the Library's home page. Move your mouse around that page, and observe how it behaves as you hover over the page. Notice what text or images are actually hyperlinks. How can you tell that they are? Click on one of two of the links, and use your back button to return to the Library's home page.



## X. Bookmarks—keeping track of web pages you want to remember

All browsers have a system of keeping track of the web pages that you want to remember. The browser does this by “memorizing” the URL and name of the website you choose, and gives you tools and a location to find these bookmarked sites later. Some browsers call bookmarks “favorites” and the two terms are interchangeable.

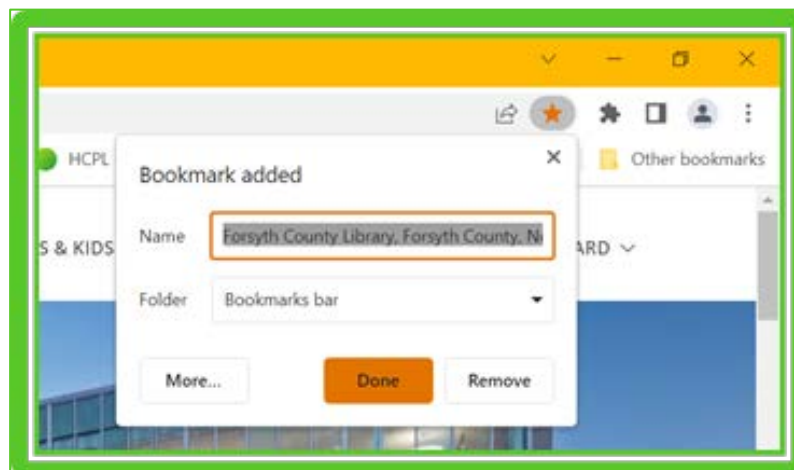
To bookmark a site, click on the star icon in the upper right-hand corner of your browser.

As you click, you’ll see a dialog box that opens and gives you an opportunity to name that bookmark with a name that makes sense to you. Then you can choose where you would like to store that bookmark to access it later, either in a special bookmarks folder, or conveniently on the browser in the “**bookmarks bar**”, a special toolbar located under the address bar.



Try an exercise with bookmarks.

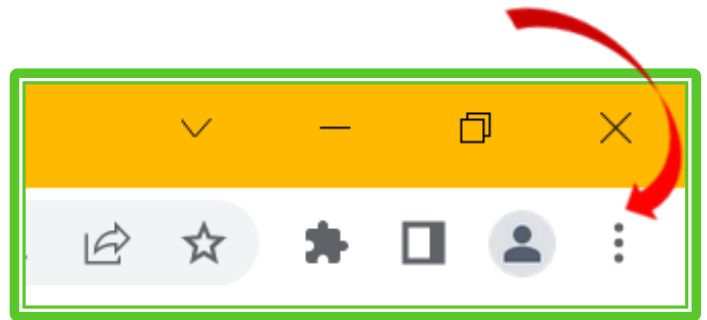
1. Using one of your open tabs, click on the star icon to add a bookmark for that page. Create your own name for that page, or use the autofill suggestion.
2. Choose the “Bookmarks bar” folder, click done, and notice where you now have a bookmark for that page.



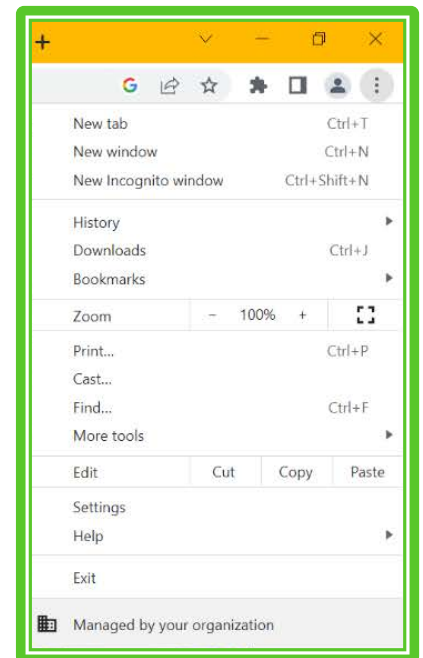
## XI. Advanced browser settings

### Advanced browser settings.

We are exploring basic tools and tools for using the Chrome browser to access the Web. There are actually many more tools available to you than we cover in this class, and there are many ways to customize the way your browser works. Look again at the upper right of your browser and find the stack of three dots. You may have seen this icon on your mobile devices, because it is a common way to indicate “click here for more tools and settings”.



As you click, you’ll see a menu of other choices you can make and settings you can adjust. Please note in particular that you can find your bookmarks using this menu, you can open a new tab in your browser, and you will find your print command here, as well when you are ready to print. After class, take an opportunity to learn more about the various tools and settings available to you.



## XII. Your search history.

Most web browsers keep track of the web sites that you visit. This is a positive feature when it allows you to remember and find a site that you looked at an hour ago, or a few days or weeks ago. This can also be a negative feature, and many users prefer that the browser not track your viewing history. Different browsers have different ways for you to control how your search history is treated.

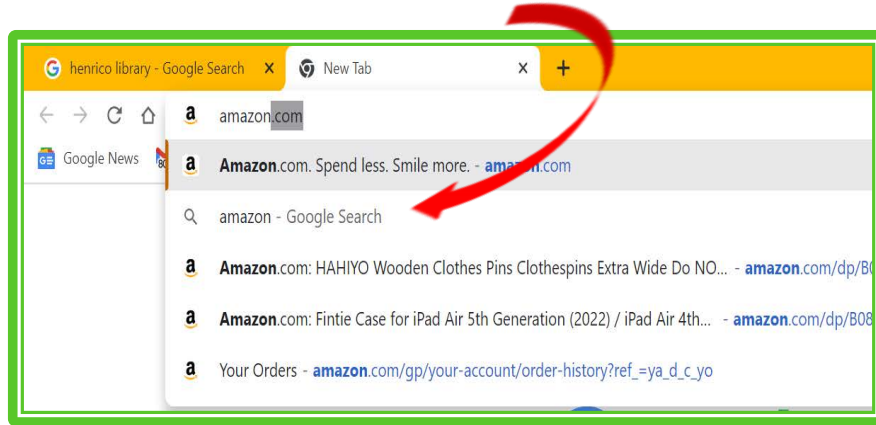
To see your **browsing history** now, move to the upper left of your browser, and click on the back button and hold it down. You should recognize a list of the websites that you have visited in class today. If you can also find your search history by opening up the advanced tools menu we just visited.

If you are using Chrome as your browser, and you want to use the web without the browser tracking your activity, you can use “Incognito Mode”. To work incognito, use the three dots to access your advanced settings, and click on “New Incognito Window.” Chrome offers this service, **but please be aware that there is no guarantee that your viewing history cannot be tracked somehow when you are using the Internet—you cannot assume perfect security.**

### XIII. You can use your address bar to search for information.

We've been using Chrome today by typing in specific URLs in the address bar. Do you remember that when you were typing in the address bar, the autofill feature started suggesting spellings, or webpages that it predicted that you might be looking for?

Note what happens when I decide to do some shopping at amazon.com when I begin typing in the word "amazon". Autofill makes some suggestions.



The red arrows points to a second popular function of the address bar. The address bar is allowing you to search the web, not just type in and visit specific web pages.

Try this yourself. Begin typing in the address bar. Rather than typing in <amazon.com>, just type in <amazon> or <scottie dogs> or <kayaking james river> and click on the dropdown autofill suggestion that includes your search terms and "Google Search".

Your address bar is behaving like a Search Engine.

### XIV. Search engine. A search engine finds web information.

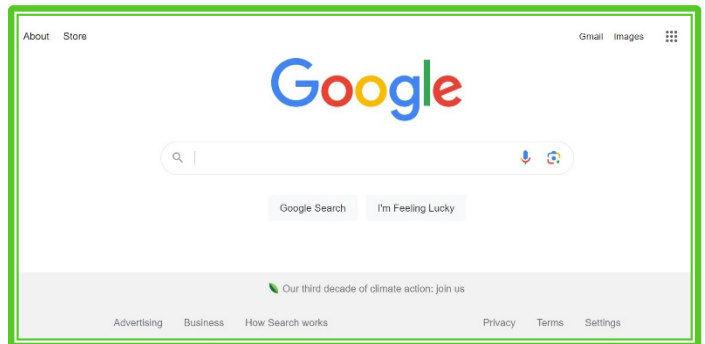
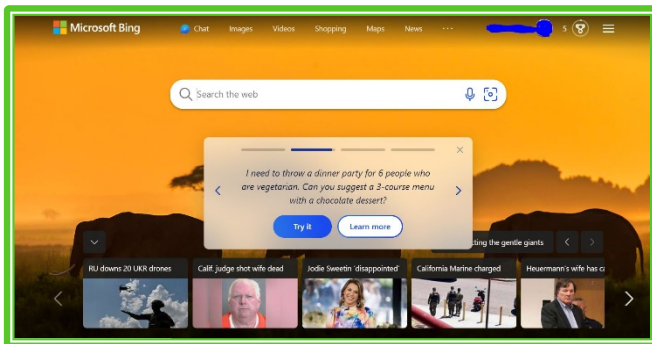
What if you don't know a web site's URL—its web address? A search engine is a program—a tool—that allows you to specify something to search for across the Internet. You tell the search engine what you are looking for, and it returns a very extensive list of results that it predicts are what you want. You then examine those results to choose which resource you'd like to look at.

## Some popular search engines.

Search engines must be used within a web browser. So you will learn that popular search engines are provided by the same corporations that produce the web browsers you are learning about.

**Google** is made by the Google Corporation, makers of the Chrome web browser. Its URL is <google.com>

**Bing** is made by Microsoft, makers of the Edge Browser. Its URL is <bing.com>

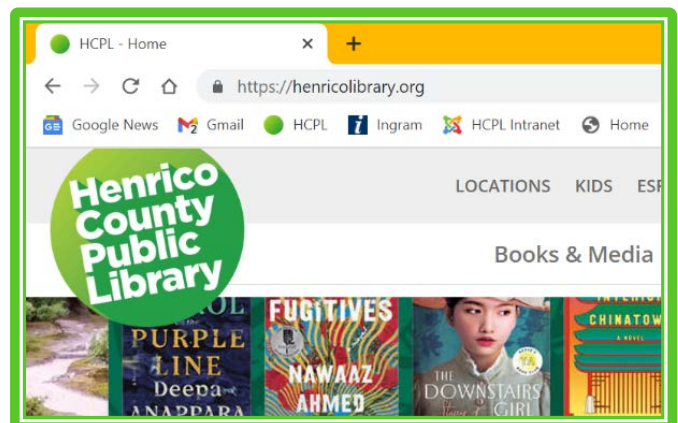


But you do not have to use the search engine that is made by the same producer as your web browser. For instance, **Google** is also the search engine used by Firefox and Safari browsers.

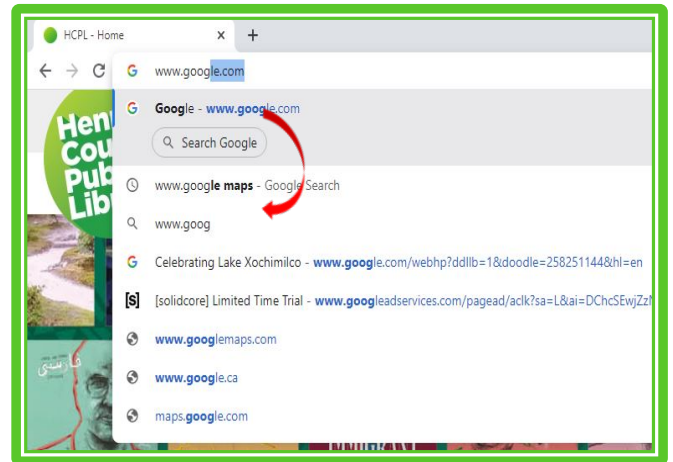
**If you find it confusing to tell the difference between an internet browser, and a search engine, that's not surprising, since they work together so closely. Try remembering that a search engine FINDS information on the internet for you, and an internet browser DISPLAYS information and allows you to interact with and use that information.**

Try an exercise using the Google search engine.

1. **Open your Chrome internet browser if it is not already open. Notice what "home" page opens initially, and identify it.**



2. In the browser's address bar, type `<www.google.com>` . As you are typing, does your browser use autofill to suggest some web resources that you might be looking for? In that list of suggestions, do you see the result for `<www.google.com>`? Note that after you finish typing and press enter, your browser takes you to the Google Corporation's main page for the Google search tool.

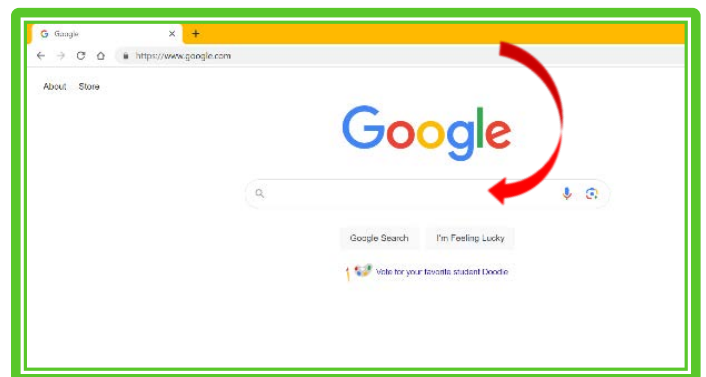


3. Return to your address bar, and this time type in `<google.com>` . Notice that it is not necessary for you to type in the full URL, `<https://www.google.com/>` that was necessary to type in in the past. Modern browsers make it convenient for you to only type in the domain name for the site you are looking for.

4. Make sure you are on the Google search page. Let's conduct a search, and examine what a page of search results looks like.

In Google's search field, type `<electric bikes>`. After you hit the enter key, you will see what's called your search "hits" or "results".

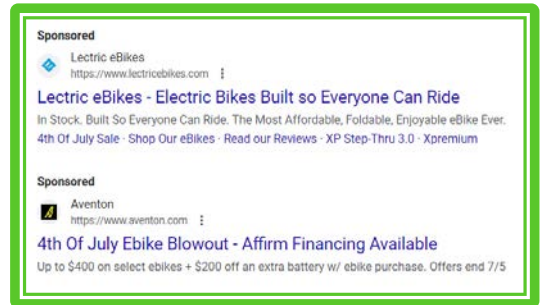
See how your results change if you type in `<electric bikes Virginia>`.



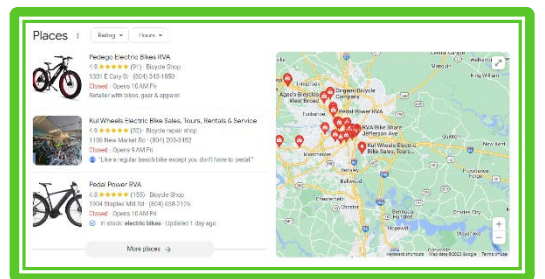
Another exercise.

Look at the results for your search for <electric bikes Virginia>. Let’s identify some of these common types of results you will see in a search in Google Chrome. Recognizing these kinds of results in your searches will help you develop better judgment in deciding if a result you choose and click on really has the information you are looking for.

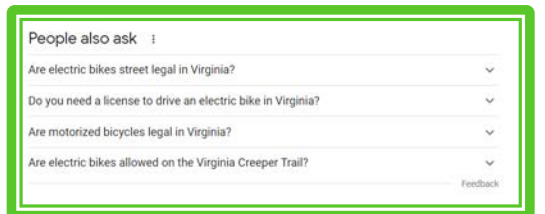
- Paid advertisements—exactly what they sound like. Businesses make money every time you click on one of their links. They are at the top of the list, because businesses have PAID to be there.



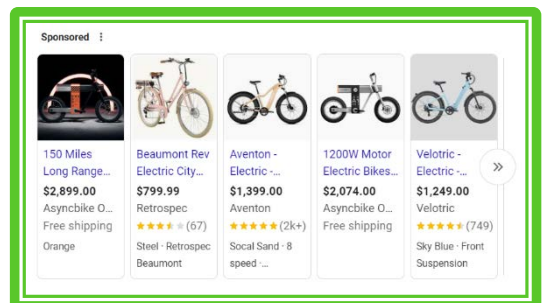
- A “local SEO 3-pack”—this feature displays three local businesses who have paid to appear in this kind of sponsored block of ads.



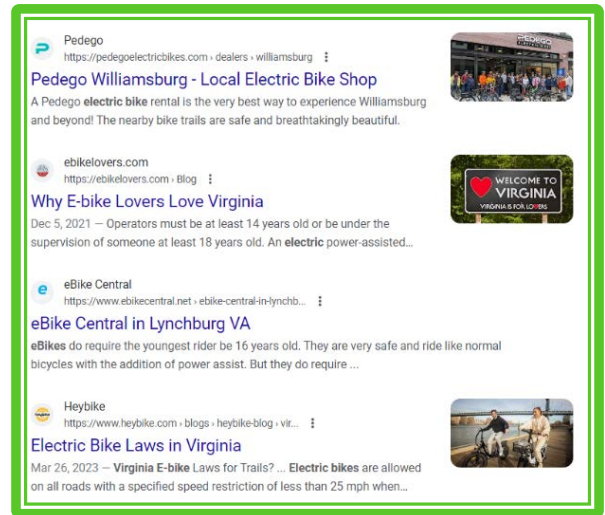
- “People also ask” section—Chrome suggests a list of searches similar to yours that may be helpful.



- Carousel—again, this feature allows businesses to display their products and prices using images and links to reviews to entice you.



- **“Organic” results—these are UNPAID results that might include information sources, businesses, personal webpages, blogs, government sources, etc.**



- **Other features you may see on your search engine results are links to Twitter posts, a carousel of video results, a “snippet” which is a quick and concise quotation from a web resource that might be applicable to your search, or a “quick answer” which appears if your search only needs a short, factual response that is common knowledge.**

## **XV. Evaluating web resources.**

You now have a good idea about how to use a search engine, and how to look at a search engine results page to interpret the choices it delivers to you. What do you need to be aware of to find quality information after you choose a result to click on an use?

- Some of the information and results you see is there because someone has paid for that information to appear prominently in a list of search results.
- Anyone in the world can create and publish information on the web. That does not mean that when you are using their website, that you are seeing the information that you were actually trying to find, or that you are seeing correct information, or that the intentions of the publishers is honest.
- Check the top-level domain in the URL. Is it appropriate for the information you want?
- Look for the publication date of the web page. Is it current? Timeliness is important.
- Look for a web resource’s “About” information to determine who has published that information. Do you consider them to be a reliable source?
- Is the information on the resource appropriate for its audience?
- Note if you see poor grammar, many misspellings, factual errors, etc.

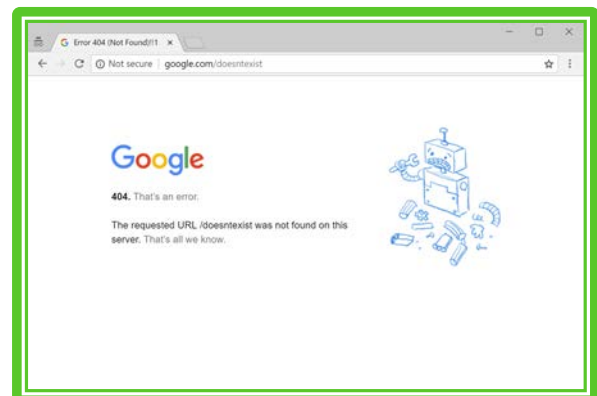
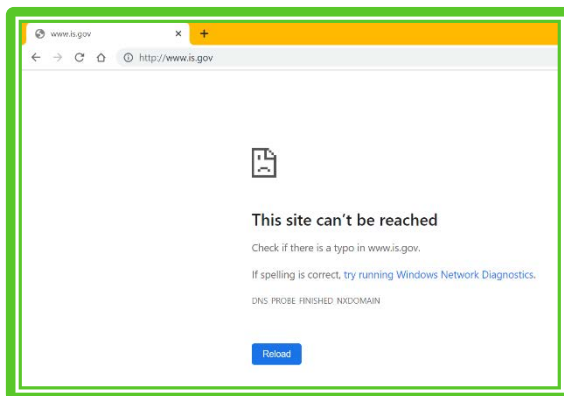
Try an exercise evaluating web resources.

1. You need to find information about your Virginia Income tax return, and you want to print a form. Using the Chrome browser, go to the Google search tool. Think about how to enter keywords to find the information you want. Explore the first page of search results. Can you choose a good search result to find the information you want? Why did you choose the resource you picked?
2. You are interested in finding out about vacation cabins in Virginia. Using Google search create a search that would allow you to a. find a vacation cabin in the mountains and b. find out about vacation cabins that are available to buy. Can you identify search results that are “ads”?

## XVI. Error messages.

Sometimes you will navigate to a web pages that displays an error message. There are several different kinds! Reading the error information may help you understand what happened—or it may not! If your reach an error message that you don’t understand, you can always use your browser’s back button to return to your previous page.

- There may be a typo in the URL you entered into the address bar.
- The web site’s URL may have changed, and you entered an older address.
- The web service may be having temporary problems and the site is “down”.
- Make sure that you are connected to the Internet—click the internet access icon in your computer’s system tray to determine if you are actually connected.





## XVII. Internet Safety

It is almost impossible to avoid using the internet today for information, communication, and recreation, but there will always be issues with safety and security of your data and your personal information, and you are ultimately responsible for learning how to keep your data as safe as possible.

- ❑ Passwords. Try to create strong passwords that are unique and not easy to guess. Do not use the same password on multiple web sites. Keep track of your passwords, and consider using a password manager app. Some examples of really bad passwords:

123456      qwerty      password      your own name or birthday

Some examples of good passwords:

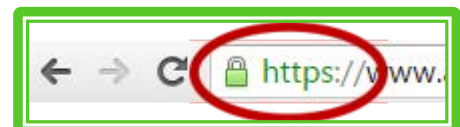
#\$sum1966ALP      E\*L&vis14##      43%B99Keys

Consider using a password phrase that you can adapt to use to build unique individual passwords. Invent a phrase that only you know, for instance <BeardedMothChow>. It needs to be something you can easily remember and no one else can guess. You can adapt that passphrase to create many different unique passwords such as:

2023bEARDEDmOTHcHOW  
\*BeardedMoth127Chow  
B12M21C1959\$

**DO NOT USE ANY OF THE PASSWORDS FROM THIS DOCUMENT! Make up your own.**

- ❑ Be aware that it is risky to share your personal or financial information on the internet, including social media and email.
- ❑ If you are using a public computer, and you log into any web site, for instance, your email, remember to log out before you leave that site and that computer workstation.
- ❑ Become aware of email scams and how to avoid them. Here are some hints that an email message may be part of a scam:
  - An Unfamiliar Tone or Greeting
  - Grammar and Spelling Errors
  - Inconsistencies in Email Addresses, Links & Domain Names
  - Threats or a Sense of Urgency
  - Suspicious Attachments
  - Unusual Request
  - Recipient Did Not Initiate the Conversation
  - Request for Credentials, Payment Information or Other Personal Details
- ❑ Do not open attachments in email messages unless you know the sender of the message, you are expecting an attachment.
- ❑ Make sure your computer has security software and keep it updated.
- ❑ When shopping online or conducting financial transactions, check that the website you are dealing with uses SSL technology that makes communication much more secure. Find this by looking for the padlock icon in your address bar, or looking for <https> in the URL.



## XVIII. Further Resources

Here are some suggested resources you can use to learn more about the topics we've covered today.

**Henrico County Public Library** offers an online learning database, **Universal Class**, which you can use through the Library's Online Resources page at [www.henricocountyva.universalclass.com/](http://www.henricocountyva.universalclass.com/).

To use **Universal Class** you use your library card number to sign up with the service, and there is a huge range of self-paced online courses including courses covering many computer skills, including Computer Literacy, Internet Fundamentals 101, and Securing Your Data and Privacy. For help using **Universal Class**, you are welcome to talk to staff at your Library's Information Desk.

The website **Tech Boomers** at [www.techboomers.com](http://www.techboomers.com) is a free educational resource where inexperienced Internet users with basic computer skills can learn about popular and trusted websites.

**The Goodwill Community Foundation's** website has free tutorials for all kinds of topics, including using the internet at [www.gcflearnfree.org](http://www.gcflearnfree.org)