Computer Literacy: Concepts and Terms

1   GETTING STARTED

This course is designed to put you in the driver seat. You'll learn the basics as you work through the sections of this outline. Explanations are provided along the way and you are encouraged to ask for help if you get stuck. Instructions for you to follow are displayed in blue.

Some of these steps in blue cannot be performed on the public computers at Knox County Public Library because of security settings that disable many Windows features. If you come to an in-person workshop, you can try those steps that you can't do on your own.

- ✐ Ask the librarian for a color copy of this outline if you need it printed.

- ✐ DigitalLearn.org (this is a link to the website) is a website with videos and handouts. Can you click the link? Does the website appear?

If there is a section of this outline that goes well with one of the lessons on that website, a link like the one below will take you to that lesson:

- ✐ Watch *Getting Started on a Computer* at DigitalLearn.org.

If you need help getting to the DigitalLearn.org website, please ask for help at the library.

2   OPERATING SYSTEM (OS)

2.1   EXAMPLES

The operating system is software that provides the **user interface**—how a user enters and receives information. It provides the capabilities of the hardware to apps as needed: managing memory, processing, input and output, storage, and security. The OS must be compatible with your hardware, and your apps must be compatible with the OS.

- iOS is the OS for iPhones, and iPadOS is for iPad tablets; both are by Apple.
- macOS is for Apple computers.
- Android is the OS for many other smartphones and tablets; it's by Google.
- Chrome OS is for laptops and convertibles; it's also by Google.
- Library computers use Windows 10; it's by Microsoft.

  - ✐ What is the OS of your device?

2.2   WINDOWS ENVIRONMENT

2.2.1   Desktop and Start menu/Start screen

The **Desktop** appears after a user signs in, completely filling the screen. The Desktop can present the most frequently used apps or files. (There can be multiple desktops, but we'll keep it to just one for now.)

The **Start Button** in the low left corner (on the **Taskbar**) launches the **Start menu**.

> Ø Tap or click the Start Button a few times. What happens? Stop with the menu expanded.

You see three columns: a menu navigation pane on the left, an apps list in the middle, and a spread of tiles (square or rectangular, in various sizes) on the right.

On devices that offer a **tablet mode**, the appearance is simplified to the **Start Screen** for easier use by fingers, and the Desktop is unavailable. Tablet mode can be turned on and off on devices that have a physical keyboard.

The Start menu navigation pane on the left has a "hamburger" icon at the top.

> Ø Tap/click the [icon] hamburger icon a few times and watch the navigation pane expand and collapse.

Hamburger icons expand a menu; in this case it displays text labels for options that were already presented with icons, and it removes the app list to make room for those text labels.

> Ø Become familiar with the icons of the navigation pane, as they are common in interfaces (apps, websites, phones, tablets, etc.):

☰	Hamburger: indicates a menu, or list of options
👤	Person: indicates your account, where you find account options and sign out
📄	Documents: indicates your document library in file storage
🖼	Pictures: indicates your pictures library in file storage
⚙	Settings: indicates settings and preferences, allowing you to personalize
⏻	Power: sleep, shut down or restart

The **apps list** uses expand arrows to indicate more levels to explore. Some items in the apps list are really parts of the OS, such as Windows System.

The tiles on the Start menu or Start screen are designed for use with a touchscreen and touch gestures such as swipe, pinch and stretch. You can use the tiles with a mouse or touchpad, also.

Some tiles display current information on them; they are called "live tiles" if they update.

> ⌀ Look for any "live tiles" in the Start menu. (All your tiles might be static.)

> ⌀ Close the Start menu and explore other features of the Taskbar:

◯ Type here to search ⬚	Search bar
⌷	Task View
e 📁 🏪 🌐	App icons (except in tablet mode)
∧ 🖵 ◁)) 4:00 PM 12/19/2019 💬	Notification area–tiny icons and clock on the far right of the Taskbar; Action Center is the last one
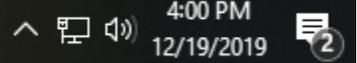
2.2.2 User interface

2.2.2.1 Point

The **pointer** is your main way of interacting within the Windows environment if you don't use a touchscreen. The pointer on the display moves in response to your movement of a pointing device, usually a mouse, touchpad or joystick.

> ⌀ Notice that if you hesitate after pointing to an object, you might get the name or explanation of that object. It's a good way to learn what icons and buttons do.

> ⌀ Practice pointing to objects on the Desktop and Taskbar, pausing to see whether an explanation appears. These are called **ToolTips**.

> ⌀ Point to the last icon on the far right of the Taskbar. The ToolTip will either indicate notifications or "No new notifications." That icon is for the Action Center.

2.2.2.2 Tap/click

A touchpad tap will open an app on the Taskbar but it only selects an icon on the Desktop; a double-tap opens an app on the Desktop. Using the mouse, the same operations are a single click and a double-click on the left mouse button.

- Ø Practice the tap or click on the desktop icons, and notice how an icon's appearance changes when it has been selected.

THE CHANGED APPEARANCE OF SELECTED OBJECTS IS A VERY IMPORTANT CUE TO THE USER. COMMANDS (SUCH AS <u>DELETE</u>) ARE APPLIED TO SELECTED OBJECTS. LEARN TO WATCH FOR IT SO THAT YOU'LL KNOW WHAT OBJECTS WILL BE ACTED ON WHEN YOU GIVE A COMMAND.

- Ø Tap or click (hereafter tap/click) the search bar. What happens?

2.2.2.3 Cursor

The **cursor**, or text insertion point (also called a *caret*), is a blinking vertical line where text appears as you type. It will only appear in an area of the display that allows for text entry.

- Ø Look at your cursor in the search bar (it's there because you activated that area of the screen in the previous step, with a tap or click).

- Ø Type *weather*. See the cursor move within the search bar as you type.

- Ø Press the Enter key and see if you get your local weather.

Cursor control keys on some hardware keyboards (page down, page up, home, end, arrow keys; also called navigation keys) also move the cursor.

2.2.2.4 Voice recognition (requires microphone)

Cortana is the voice-activated personal assistant in Windows (three other digital assistants are Apple's Siri, Google Assistant, and Amazon's Alexa). It can be used to search the computer as well as the Internet, and to open apps. "Hey Cortana" tells the assistant to listen for a command to follow.

- Ø Tell Cortana to open the File Explorer window like this: while watching the search bar, say "Hey, Cortana" and after you see a response (Cortana is listening), say "open file explorer." Wait while Cortana thinks. If you see no response at all, either there is no working microphone or Cortana is not enabled.

2.2.2.5 Window

- Ø If Cortana did not open File Explorer, point to an icon on the Taskbar that resembles a manila file folder in a holder. Tap/click to open.

Now you should see a window, which is a rectangular area of the display that is a visual container for a task or app. Some of the typical features of a window are (from top down):

- · Title bar: this title bar displays "File Explorer" and buttons to the left of that make up the Quick Access Toolbar; with Minimize, Resize, and Close buttons to the far right (sometimes small windows only have a Close button)

- Point to each button on the Title bar and read the tips that appear.

- Menu bar, toolbar, or command ribbon with tabs, all of which are strategies for displaying ways to work within the window—mostly command buttons

  - Point to each button on the Menu bar or ribbon and read any ToolTips that appear. Home, Share, and View are not buttons, but **tabs**. Pointing to them does not provide tips.

  - The command ribbon can collapse and expand. On the far right of the Menu bar, a tiny arrow icon (left of the question mark) points up or down. Tap/click it 3-4 times to see the collapse/expand happen. Leave the ribbon expanded.

- File Explorer features a location bar for exploring locations of file storage. Right now it probably shows *Quick Access*.

  - Look in the left pane for *Documents* and move your pointer to it.

  - While watching the location bar, tap/click the Documents library. See that the location bar changes.

  - Watch "Using a PC (Windows 10)" at DigitalLearn.org

In the steps to follow, instructions will not direct you where, exactly, to point and click. See if you can figure it out. Verbs such as *open, select* or *use* tell you the operations to perform, but you must examine your device to know whether to touch the screen, tap, or click.

3   WEB BROWSERS

A web browser is simply a tool for navigating the World Wide Web. We will be using the Edge browser, which replaced Internet Explorer as the default browser in Windows 10. Other browsers include Google Chrome, Mozilla Firefox, and the web browsers that are installed on your smartphone or tablet. Each browser has the same basic features for using the web, so you can easily adapt from one to another.

- Watch Navigating a Website at DigitalLearn.org.

3.1   BASIC FEATURES

- Open the Edge browser.

3.1.1   Address bar

knoxlib.org   The address bar is where you can type in a known website address or a search. It also displays your current location when you are on a website.

3.1.2 Forward and backward buttons
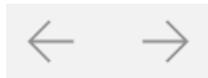
When you go from one web page to another, the browser remembers where you have been. You can go forward and backward in your browsing history with the forward and backward buttons.

3.1.3 Refresh

The refresh button reloads a web page. This can be useful on a site with rapidly changing information, such as news or social media. While a page is loading, this button becomes an X to stop the loading.

3.1.4 Browser tabs

Tabs allow you to open multiple pages within the same browser window. In Edge:
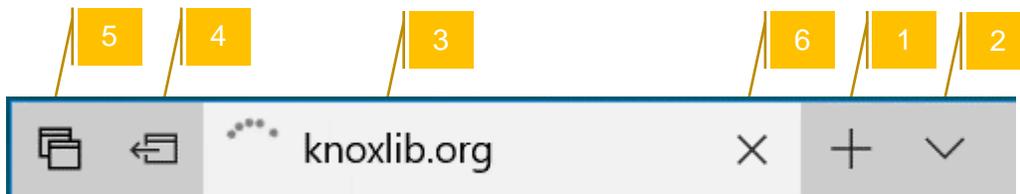
(1) Use the + to open a new tab.
(2) See a thumbnail preview of your tabs.
(3) Select a tab to view it, or use Ctrl + Tab on the keyboard to quickly change tabs.
(4) Set tabs aside for later to unclutter your view.
(5) View and selectively restore the tabs you set aside.
(6) Close a tab with its X.

3.2 GETTING ON THE WORLD WIDE WEB

3.2.1 Go to a known website

Type the URL into the address bar, such as www.knoxlib.org, then press enter to go to the site. Suggestions for sites or searches will display below the address bar as you type. You can select one of these if you wish to quickly go to that site or do a search.

> ✐ On the address bar of the Edge browser, type *Yahoo.com*, then press the enter key.

3.2.2 Search for an unknown website

If you don't know the name of a website, you can do a search in the address bar. This search will use the default search engine for the browser, such as Bing in Edge or Google in Chrome. You can change the default search engine in the browser settings, or go to the website for the engine you prefer to conduct your search.

> ⊘ Open a new tab (use + by the open tab). Enter *ut football schedule* on the address bar (note how suggestions appear below as you type).

Search results are listed on the page, often with paid ads at the top or side. These contain some information about the results which we will examine soon, but you get to one of those sites by selecting the link.

From this point on, the instructions below will just say "search" or "go to [address]," assuming you know to do it on the address bar.

3.2.3   Following links

Search results and other web pages contain links (also called hyperlinks) that lead to other pages on the website or to other websites. Nearly any element on a page may be a link but the following are most common:

ü Text, usually underlined or in a different color from normal text
ü Images, which may be pictures, icons, buttons, etc.

If you are using a pointing device, you will usually see the pointer change into a hand shape to indicate the presence of a link.

4   USING WEBSITES

Finding a website is the initial part of your search. Once you arrive on a page you will still need to navigate the site to find what you're after. While every website is different, in website design there are some standard features that you will find on most of the pages you visit.

> ⊘ Search for Knox County Public Library, then follow the link to get to the site.

4.1   NAVIGATION

4.1.1   Scrolling

Most websites contain more information than what you see on your screen. Scrolling the page means making the content on the screen move up or down so you can view all the contents.

> ⊘ Scroll the site's home page in the window. You can roll a mouse wheel, or use a touchscreen up/down swipe gesture, or swipe on a touchpad.

4.1.2   Menus

A menu provides structured pathways for exploring different categories of content or features of a website. They are generally arranged near the top or left side of the page, and are usually in the same location throughout the site; but they can also appear in other places and might even move around.

4.1.3   On small screens

Many websites format contents to fit the screens of devices such as phones or small tablets, simplifying menus and utilities or moving them to the bottom to make the main content of the page appear nicely on a small screen. Look for icons to expand menus and access various options. Icons to look for include:

ellipses (vertical or horizontal)	⋯ ⋮
hamburger	☰
arrows (pointing any direction)	〉
gear or cog	⚙

4.2   UTILITIES

Websites use a variety of methods to provide information about the site owner, help using the site or services, and interactions. The upper right corner and the footer are often where you find most of these.

4.2.1   Site search

You can search just the contents of the site, indexed to favor what the site builder thinks is more important. This is usually a quick way to find what you are looking for.

4.2.2   About

Find information about who owns or controls the site, the purpose of the site, and more. On a commercial site, it may include things like return policies or warranties, while a nonprofit may include a philosophy or purpose statement with information about staff or board members.

4.2.3   FAQ

FAQ = Frequently Asked Questions. You may find answers to many questions you may not have thought of. It's a great place to start before you attempt to make contact via email or phone, and can save time.

4.2.4   Contact

Usually you find email addresses, mailing addresses, and telephone numbers, but often you must fill out a form to contact the website owner.

4.2.5   Register/sign up, my account, sign in/out, log in/out

Account features let you return to the site later and pick up where you left off with your use of the site. Many sites allow you to sign in using an ID from another site, such as a Google or Facebook sign-on.

4.2.6   Save, download, email, print

Site utilities for printing and saving usually give better results than browser or operating system tools.

4.2.7   Follow, share, subscribe

Most sites will contain links to Facebook, Twitter, Pinterest, and other social media sites. These are often located at the top or bottom. Some will offer an email subscription, also.

> Ø Using what you know about navigating a website, find out how to get a library card.

4.3   FORMS

Forms are common components of websites and are often required for setting up accounts, applying for jobs, and contacting a company or organization. The types of form fields include:

- ü **Text fields:** Enter text. Watch for instructions about the specific requirements.
- ü **Check boxes and radio buttons:** Make selections from options that are shown.
- ü **Drop-down lists:** Make a single choice from a list that expands when you activate it, usually indicated by an arrow.
- ü **Date Fields:** Enter a date using a specified format, sometimes with a calendar date picker.
- ü **"Captcha" tests:** These tests prevent the use of automated programs to complete forms. You must complete a task to prove you are a human submitting the form.

> Ø Go to **www.knoxlib.org/form**. This form presents many typical interactions: placing the cursor within form fields, selecting from drop-down lists, checking boxes and radio buttons, picking a date, and answering a CAPTCHA.

> Ø Fill out the form, noticing instructions that appear when you activate certain fields with the cursor.

4.4   GOTCHAS

There are several elements to be aware of and watch out for on websites. Some are annoying, while others are misleading and potentially threatening.

4.4.1 Popups

Often a window will "pop up" or "pop over" the page, requiring you to view an ad or asking for your email address. Usually you can close these by looking for a button such as an X (upper right), Exit, or Skip. Sometimes they appear just as you move the mouse to the top, as if to leave the site. You can also configure how your browser handles pop-ups, which we'll look at in settings later.

4.4.2 Continuous scroll

Many websites now use a design called continuous or infinite scrolling. This means that as you scroll the page, new content continuously loads below. It can take a while to realize that you will never reach a bottom to the page, and the content can reposition as you are scrolling so that you lose your place and become disoriented. Also, if you follow a link and then return to the page, it can be difficult to get back to the same place.

4.4.3 Ads and clickbait

Many websites, especially .com sites, are full of ads and enticements to click on various links. It's one of the ways websites make money. While search engines designate ads, you must be more careful on most other sites. Click-bait is usually under headings like "more for you," "you may also like," or "around the web." The layout of clickbait in a grid is called a chumbox, after the rotting fish.

4.4.4 Requests to share location

Many websites want your location so they can target you with ads or give useful information based on local options. The browser may prompt you to allow this. This can be a privacy concern.

5 WEB SEARCHES

Search engines use the keywords you enter to bring you a list of relevant websites.

> ⌀ Watch "Basic Search" at DigitalLearn.org.

5.1 CONSTRUCTING GOOD SEARCHES

There are some strategies you can use to get good search results:

- ü Start with a simple search. Use keywords or phrases instead of complete sentences.
- ü Searches are usually based on any of the words in your search phrase, but you can specify a phrase by enclosing it in quotes, i.e. *grown from "human stem cells"*
- ü Notice the suggestions that appear as you type your search—they can be good ones.
- ü Add the place name if location is important, such as *sushi restaurants Knoxville TN*.
- ü Use tabbed options to narrow your results to different types of content such as news articles, images, or videos.

ü Try more than one search engine. We like Bing, DuckDuckGo, and Google.

5.2 IDENTIFYING A GOOD SEARCH RESULT

An essential of searching is evaluating results and choosing the best option from the list.

> *⌀ Search mcdonalds jobs.*

ü The first results are likely to be advertisements. Search engines charge a small fee to place results higher. Promotions will be labeled "Ad" in small print; you have to be really looking for it or you might not notice, especially on a phone screen.

ü Note the address of websites in your search results. The official website address for McDonald's is not likely to be mcdonalds.localjobster.com.

ü *SOMETIMES WEBSITES THAT MAY BE LESS THAN TRUSTWORTHY USE NAMES THAT ARE CLOSE TO THE NAMES OF WELL-KNOWN COMPANIES.*

ü Large aggregators (presenting content from across the Internet) such as Google and Facebook use computer code to automatically promote "news" stories. These are not checked by humans to see where they are coming from or whether they are real, so **fake news** is promoted alongside legitimate news.

5.3 EVALUATING A WEBSITE'S CRAAP

5.3.1 Currency

How up-to-date is it? Are there many broken links?

5.3.2 Relevance

Does the information relate to your need? Is it written at your level of understanding? Who is the intended audience?

5.3.3 Authority

Is the source of the information qualified in the subject area? Are there professional credentials or organizational affiliations that you find trustworthy?

5.3.4 Accuracy

Is the information supported by evidence? Can you verify the evidence in another source? Are there spelling, grammar, or other errors?

5.3.5 Purpose

Do the authors/sponsors make their intentions or purpose clear? Are the purposes to inform, sell, entertain, or persuade? Is the information fact, opinion, or propaganda? Does the point of view seem objective and impartial? Does the language or tone seem biased or emotional?

6   WEB BROWSER TOOLS

Browser buttons and toolbars are kept to a minimum by default. You may choose to display more or fewer toolbars.

6.1   READING VIEW

Reading view creates a slim version of a web page by removing ads and other marginal stuff so you can concentrate on the article you want to read. Activate it in the Edge browser with the reading mode icon, which looks like an open book. It will be ghosted where it is not available.

- ∅ Go to nybooks.com, pick out an article, and see it with and without reading view. Did you lose some of the important information by going into reading view?

6.2   FAVORITES AND READING LISTS

Favorites (also called bookmarks) are links to web pages that you save so you can quickly revisit them. Use the star in the address bar to bookmark the current page in most browsers. In Edge, you can also use the star to add a page to a reading list, to read later.

- ∅ Bookmark your current page using the star. Choose favorites bar as the location.

- ∅ Also add the same article to the reading list using the star.

6.3   THE HUB

Edge uses the Hub to access your favorites, reading lists, books (from the Windows Store), browsing history, and lists of downloads.

6.3.1   Favorites

This is where you organize favorites into nested folders, like you do with files in File Explorer.

- ∅ Find the favorite that you saved to the favorites bar.

- ∅ Use the plus-folder icon to create a new folder. Name the folder.

- ∅ Drag and drop the favorite from the favorites bar folder into the new folder.

- ∅ Use the context menu (two-finger tap on touchpad, long press on the touchscreen, or right-click with mouse) to rename the favorite.

6.3.2   Reading list

The Edge browser includes a text-to-speech voice to read aloud for you. Combined with the reading list, you can be super productive while being informed.

⊘ See the article that you put here to read later. How is the reading list different from the favorites list?

6.3.3 Books
Books is a viewer for ebooks in the EPUB file format, the most popular non-Kindle format for ebooks. A credit card is required even for downloading free books from the Microsoft Store.

6.3.4 History
This history allows you to revisit the websites that you have visited in the past. In the hub, use the clock to view your browsing history and to clear the history.

6.3.5 Downloads
The storage location for saving downloads is controlled in the Advanced settings in Edge. Clearing the downloads in the hub view does not delete them from the storage location.

6.4 WEB NOTES
Edge allows you to make notes on web pages that you can save or share. Select the notes icon to see options to write or type on, copy a clip of, or highlight part of a web page, then use the share icon to post it.

⊘ Highlight and write a note on the article you are reading.

6.5 SHARING
Edge includes a share button that allows you to quickly post a website via Mail and other applications.

6.6 SETTINGS AND MORE
Using the ellipsis icon, you can access a "settings and more" menu to configure your browser, print, find extensions, and more (we'll call it the Settings menu). Some of the options are below.

6.6.1 Find on page
Locate a string of characters, which must be an exact match.

6.6.2 Zoom
You can change the size of text and images on the page in various ways, besides using this menu. On a touchscreen or touchpad, you can use the pinch/stretch gesture of two fingers touching the surface and squeezing together or spreading apart. On the keyboard, Ctrl with + or – zooms in/out. If you are using a mouse with a scroll wheel, hold down the Ctrl key and roll the wheel.

⌀ Practice zooming using the gesture, the menu, the keyboard, or the mouse wheel.

6.6.3 Print

Use the More menu or context menu to see the option to print. Examine the print preview before you send it to a printer. If the preview contains things you don't want, there are a few ways to optimize the print:

- ü Look for a utility provided in the website. There may be a printer icon or a print link—or a download option such as "download PDF"—which will reformat for the best layout on paper.
- ü Compare the clutter-free printing option turned off and on (this option comes and goes in context).
- ü Use the print dialog to specify printing only the pages you need.
- ü Copy and paste what you want into another application.

6.6.4 Extensions

Extensions are components that you can add to your web browser for more capabilities. Each major browser has a "store" where you can find and install new extensions.

⌀ Look for the LastPass or NewsGuard extension. Install it.

6.6.5 Settings

Settings—and there are many—allow the browser to suit your preferences, such as:

6.6.5.1 *Open Microsoft Edge with*
Set the page or pages that will open each time you start your browser.

6.6.5.2 *Show the favorites bar*
Gives chrome space for displaying the favorites that you place specifically on this bar.

6.6.5.3 *Show the home button; set your home page*
Gives you a chrome button for a quick return to your home page, which can be the same or different from your "Open Microsoft Edge with" page.

6.6.5.4 *Account*
Your favorites and reading list can sync across devices. Edge recognizes the Microsoft account that is signed in to Windows (it will also be recognized in Microsoft sites viewed in Edge, e.g. Bing and MSN).

6.6.5.5 *Block pop-ups*
Usually we prefer to block popups, but sometimes they are necessary. If you have this setting turned on, you can opt in for pop-ups as needed.

6.6.5.6 Change Search engine

Sets a different search engine for the address bar than the one that comes set by default. Microsoft browsers default to Bing, while Chrome defaults to Google. Firefox uses Yahoo.

7 STORAGE

7.1 FILES

A file is a collection of information that is saved together under one name. A file can include text, images, sounds, and other kinds of information.

- Use the Windows search bar (on the Taskbar) to search for Notepad.

- Open the Notepad app. Type *Hello, world!*

- Select File on the menu bar, then select Save.

- Be sure the Save In location (in the left pane) is Documents.

- Give the file the name *hello* and finish with Enter (keyboard) or Save (screen button).

You just created a file. How? By inputting data using an app appropriate for that kind of data (text), then saving it with a file name in a storage location, that's how.

- While you still have two windows open, see if you can go back and forth between having each one on top. Use their Taskbar buttons and minimize buttons.

- Close Notepad.

7.2 FOLDERS

Folders are ways of organizing files on computer storage. How you organize your own files into folders is entirely up to you. You can have folders nested within folders, many layers deep.

The location bar of the File Explorer window separates folders with the **expand arrow**. You can go directly to any folder within the bar by selecting it (tap or click).

7.2.1 Saving and retrieving

On your own personal computer, usually you would save your data somewhere within the Documents library or another one of the **file libraries** such as Music, Pictures, Videos.

When you look for your files, usually you should look in one of the file libraries in your Windows login (Documents, Music, Pictures, Videos). Look in the Downloads folder for files you would

have received from online sources. If you cannot find where a file is saved, use the Windows search bar.

7.2.2   Organizing

In the next steps, you will practice the most fundamental method for using a computer: (1) select one or more objects, and then (2) select a command to act on the selected objects.

To select a file or folder, tap/click it. To select more than one, use the checkboxes that appear in the upper left corner as you point.

To change the name of a file, select it, then tap/click the "Rename" command on the Home ribbon. Type in a new file name and press the Enter key.

> ✍ In the Documents folder, rename *hello* to *hey there.*

To delete a file, select it and use the delete key on the keyboard or the Delete command on the ribbon.

> ✍ Delete the *hey there* file in the Documents folder.

Get something back from the Recycle Bin by opening Recycle Bin from the desktop (or type *Recycle Bin* on the location bar and Enter). Select the file or folder, then select *Restore the selected items* on the Manage ribbon.

> ✍ Restore the *hey there* file.

7.2.2.1   Local storage

To create a new folder, select "New Folder" on the Home ribbon. Type a name for the folder, then press Enter.

> ✍ Open the Pictures library.

> ✍ Make a new folder named Pets within the Pictures library.

There are several methods for moving files and folders, but one method that always works is (1) select one or more objects, and then (2) select a command to act on the selected objects. There is a command button for *Move to.*

7.2.2.2   Cloud storage

OneDrive online storage is included with a Microsoft account. A Gmail account (or any account registering an Android device) includes Drive online storage. An account registering an Apple device includes iCloud storage. There are also other providers such as Box and Dropbox.

Apps for cloud storage let you save, retrieve, and organize your files and folders. Typically they can keep files synchronized between the cloud storage and multiple devices.

7.3   DEVICES AND DRIVES

Information is written to (recorded) and read from (retrieved) storage media by a **drive**. A drive is assigned a letter to serve as a short way of referring to the drive. Drive letters are followed by a colon (like "c:").

The most important area of storage is the hard drive, which is usually internal (inside the system unit), has a high capacity, and is faster than other storage.

Typical Windows computers assign c: to the hard drive, which can sometimes be partitioned so that it has additional drive letters to refer to different sections of it. The letter designations for any other storage destinations may vary.

The "This PC" selection in the left column of File Explorer will display the most important user folders, devices and drives, and storage locations on a network. The Devices and drives section will show the hard drive (all partitions) plus devices with their own storage that are temporarily connected to the computer, such as a media device, telephone, tablet, flash drive, external hard drive, etc.

7.3.1   Types of storage

Storage is usually **magnetic** (traditional hard disks, tapes, etc.), **optical** (CDs, DVDs, etc.) or **solid state** (flash drives, memory cards).

Hard disk drives (HDD) are spinning magnetic platters. It is important not to move one of these while it is running, or it can have a "head crash" resulting in data loss. Before picking up a device with a HDD, be sure it is in sleep or shut down.

Optical storage comes in many formats, and drives are limited in what formats they can work with. For example, Blu-Ray is a format of optical storage mostly used for high-definition video and audio. There are re-writable Blu-Ray disc formats, but some Blu-Ray players might not be able to read such discs.

Solid state hard drives (SSD) are trending, especially in laptops. Pros: they're faster, lighter weight, generate less heat, consume less energy, less likely to suffer damage if dropped. Cons: they have a shorter life span in read/write cycles, secure file erasure is more difficult, and data recovery from a failure of the drive is very difficult.

ALL FILE STORAGE IS VULNERABLE TO LOSS; HAVING A BACKUP IS IMPORTANT! ONLINE FILE STORAGE IS WORTH CONSIDERING. MICROSOFT, GOOGLE, AND APPLE ACCOUNTS ALL INCLUDE ONLINE STORAGE.

7.3.2   Expanded storage

A **USB flash drive** is solid state storage that plugs in to your USB port and provides easy, mobile storage, intended to be frequently swapped between computers.

An **SD card** provides storage for mobile devices and typically spends more time mounted in one device, rather than swapped in and out between devices (although that is possible). Some devices such as cameras and telephones only accept SD cards, and some computers do not accept them but will accept a USB reader that drives the SD cards.

For even more storage options, some people use an **external hard drive**. A wireless hard drive uses either Bluetooth or Wi-Fi to allow almost any kind of device to access the files. This is particularly useful for sharing files between computers, smartphones, and tablets, since smartphones and tablets don't easily and directly connect to hard drives with the same cables that connect the drives to computers.

IF YOU USE A COMPUTER AT A LIBRARY, SAVE TO YOUR OWN FLASH DRIVE, OR SAVE TO ONLINE FILE STORAGE SUCH AS ONEDRIVE.

8 WINDOWS 10 SETTINGS

8.1 USER ACCOUNTS

When you use a computer (including tablets and smartphones with Android, iOS, etc.), you are using an account that's registered in the OS. Ideally this account would be used by only one person, not shared between users. Setting up the account usually requires a username and password. Once the account is set up on a device, signing in as that user can be done in various ways, such as a PIN, a gesture, a fingerprint, or facial recognition.

8.1.1 Microsoft vs. local

When you sign in to Windows, you might use an email address that is registered with Microsoft so that your Windows user account is connected to multiple services including Cortana personal assistant, Outlook.com email, OneDrive cloud storage, Bing Internet search, MSN.com, Windows Store, Skype and Xbox. Even though you may share a computer, this kind of Windows sign-in should belong to an individual to avoid confusion. It is very simple to switch between user accounts.

Another kind of account is a local account that does not communicate with Microsoft services. This kind of account is easier to share between co-workers or family because it's not connected to so much personal information, but users still have to be aware that activity history is revealed.

8.1.2 Administrator vs. standard

Accounts can also have levels of permissions. On the two extremes:

- an administrator account can install software and change the system; an administrator sets up other user accounts so they can sign in on the device
- accounts for children can be more or less restricted as the parent wishes

For your safety, you should spend most of your time in a standard account and only use an administrator account when necessary.

8.2 PERSONALIZATION

Every user can have their own Windows environment set up just the way they like it. Your most frequently used apps, folders and files can be placed where it's easiest for you to get to them: on the Desktop, pinned to the Start menu, and/or pinned to the Taskbar.

8.2.1 Desktop(s)

- Point on the Desktop. If you have a mouse, click with the right button. You should see a context menu. (Touchpads vary, so check your manufacturer's user manual for the equivalent tap for right-click.)

- Select Personalize. You can change your theme, colors, background image, system sounds and more.

- In the all apps list of the Start menu, find the Calculator. Drag it to the desktop. Check back in the apps list and see that Calculator is still there; you just made a desktop shortcut.

8.2.2 Start menu and Taskbar

- Right-click (or equivalent tap) on a tile in the Start menu. You can resize it, remove it from the Start menu, or pin it to the Taskbar.

- Right-click (or equivalent tap) on an app in the all apps list of the Start menu. Look over your options.

- Right-click (or equivalent tap) on an icon on the Taskbar. Look over your options.

8.2.3 Ease of access

- In the search bar, search *ease of access*. Open the Ease of Access Center. Take a moment to see what kinds of options are available.

8.3 DEFAULT APPS

8.3.1 File types

Files can be of many different types. For example, a letter, memo, or report would be in a word processing file type. An account ledger would be in a spreadsheet file type. The letter would have to be opened, edited and printed using word processing apps, and the ledger would have to be opened, edited and printed using spreadsheet apps.

Some apps create files in proprietary types that can only be opened and used with the same app that created the file. There is usually an alternative type you can choose at the time that you save your file so that it can be viewed or played back with free apps.

8.3.2   Filename extensions and file associations

The computer knows the file type (and therefore what app to use to open a file) by the extension on the end of the file name, such as .txt for a plain text file, .docx for a Microsoft Word™ file. Your computer might be configured to not display the **file name extensions** in File Explorer, but that is your choice.

> ⏻ In the search bar, search for "folder options" and open File Explorer Options. View the settings under all three tabs. The one for filename extensions is under the View tab, and it's "Hide extensions for known file types."

File associations are the connection between a file type (indicated by the filename extension) and the app that the computer uses to open the file. You can make your computer open files of a certain type using a certain app by making the **default file associations**.

> ⏻ In the search bar, search for "default" and open either Default Programs or Default app settings (they both go to the same place). Scroll down and choose "default apps by file type" and scroll down to view the default program for the .pdf file type.

8.4   DEVICE MANAGER

The operating system uses **device drivers** to operate hardware. Device drivers are software that install when you connect a new hardware component to your computer so that the operating system will know what to do with it. Sometimes you don't have to manually install drivers when you add hardware; that convenience is called "**plug & play**."

Device manufacturers create these drivers. You may sometimes need to get updated drivers, or re-install the existing drivers, as a troubleshooting method when a piece of hardware doesn't work.

> ⏻ To see all the device drivers used by Windows 10, open Settings, then Devices, and then Device Manager.

> ⏻ Expand the *Sound, video and game controllers* level.

8.5   CONNECTIONS

The Action Center lets you quickly make connections to the Internet using Wi-Fi or between devices using Bluetooth. Find the Action Center on the far right of the Taskbar.

8.5.1 Wi-Fi

Wi-Fi allows for wireless Internet access over distances of several yards. This is not to be confused with the wireless Internet provided by mobile telephone companies, such as 3G, 4G, 5G. However, a mobile hotspot device can use a cell phone connection to provide a Wi-Fi connection.

Wi-Fi options are behind the Network button in the Action Center. Open connections are not secure; it's important for you to shield yourself against intrusions. Secured connections are safer, but you join them only if you can enter a security key (similar to a password).

8.5.2 Bluetooth

Bluetooth connections allow for wireless communications over several feet or yards. This is used in audio receivers and speakers, automobile systems, fitness trackers and smart watches, gaming consoles, and even prosthetic limbs. The range is advancing as Bluetooth is upgraded.

For the sake of security, computers should be set to scan for new Bluetooth connections only when you have a new device to pair. After pairing the device with the computer, you can turn the connection on and off without exposing the computer to unwanted pairings with other devices nearby.

8.6 SECURITY

8.6.1 Updates

Windows Update will automatically download updates that install themselves, usually with a required restart. Enter "updates" on the Windows search bar to check the settings.

8.6.2 Backup and recovery

Backup and recovery routines in Windows help you minimize your losses in case of trouble with the computer. Search *backup settings.*

Besides backup and recovery, a very good security strategy is to set **restore points** from time to time so that you can roll back to a previous state, before trouble began. You must be signed in with an administrator account, but then you can search for "*create a restore point."*

8.6.3 Windows Defender

Windows also keeps itself secure with **Windows Defender**, which you can use to scan offline when you suspect a security problem.

> ⊘ Search Windows Defender and open it. See the following sections:

8.6.3.1 Virus & Threat Protection

Manually launch quick or advanced scans, configure virus protection settings, and check for virus definition updates.

8.6.3.2 Firewall & Network Protection

Enable and configure the Windows Firewall, which secures against some kinds of attack over your Internet connection.

8.6.3.3 App & Browser Control

SmartScreen settings for apps that access online content; helps you to stay safe by warning you of potentially malicious sites, hazardous downloads, and unrecognized apps and files.

8.6.3.4 Family Options

Parental controls such as configuring screen time habits, managing purchasing options, and generating activity reports.

8.6.3.5 Device Performance & Health

A detailed health report evaluating the status of Windows Update, storage capacity, devices drivers, and on laptops/tablets, battery life; Fresh Start feature allows you to perform a clean install of Windows 10 while leaving your data intact.

9 PRIVACY

Since so much of our business is conducted online, browsing privacy is important for everyone.

> Ø Watch "Internet Privacy" at DigitalLearn.org.

9.1 WEB TRACKS

9.1.1 Clear your tracks

Browsers and websites retain information including data you have entered, browsing history, recent searches, and cookies

> Ø In your browser window, press Ctrl-Shift-Del together to open options for clearing history, cache, cookies, and other saved data. (If you have no keyboard, look for the options in the browser menus.)

9.1.2 Go InPrivate

Most browsers offer a mode that doesn't save any browsing data such as history, cookies, temporary files, or logins after you are done. In Edge this called InPrivate mode.

> Ø Select the more option and choose New Inprivate Window to use this mode. Close the window when you're done.

Going InPrivate keeps the browser from tracking, but it doesn't hide your activity from other snoops.

9.1.3   Send Do Not Track requests

> ⊘ Turn on this feature in the Advanced settings of Edge. Go to donottrack.us for more information about this.

9.2   WEB SECURITY

9.2.1   Use only secure sites

If you see https:// on a website address, it uses secure methods of communication to help prevent someone from snooping on your website activity, such as banking and shopping. Even if you see https:// on a website address, the website could be spoofed, so remain cautious and be sure it is the real site that you are using and not a phony site.

9.2.2   Beware unsecured Wi-Fi

Never expose financial information (banking accounts, credit cards, PayPal, etc.) when using a non-secure Wi-Fi service. Wi-Fi services can be spoofed, which means the free Wi-Fi service you find in a restaurant may not really be hosted by the restaurant; it could be hosted by the snoop sitting at the table next to yours. Also, your traffic can be sniffed. Use a VPN if you rely on open Wi-Fi for accessing online accounts.

9.3   PASSWORDS

> ⊘ Watch "Accounts & Passwords" at DigitalLearn.org.

9.3.1   Deny (or protect) browser password storage

Browsers offer to remember passwords used on various websites. You should only allow this on a device that you maintain control of and the device unlocking should be protected by a strong password. In Edge, use the "Passwords & autofill" settings to turn off the offer to save passwords.

9.3.2   Use a password manager

Security experts recommend using a different password for every account you use online, and these should all be complex passwords with special characters and symbols. You can use a password management app or extension such as LastPass or LogMeOnce to store your passwords.

9.3.3   Use two-factor authentication

This method goes beyond using just a password to authenticate an account. Many sites now allow you to require a second way to verify your identity before being allowed in. For instance, if your phone is your key, you can only authenticate on a device that finds your phone nearby (with Bluetooth or NFC). Or, a site may allow your sign-in only if you respond with your phone.

9.3.4   Windows Hello

Windows Hello enables sign-in with your face or fingerprint. With specialized hardware (including a Windows Hello capable device, fingerprint reader, illuminated IR sensor or other biometric sensors), you can get faster and more secure access to devices, apps, or even websites that support it.

9.4   WINDOWS PRIVACY SETTINGS

Cortana learns about you by listening to your voice and watching your typing and handwriting, but you can prevent that. You can selectively share your location with apps and services. You can also choose which apps (if any) have access to hardware such as the microphone and camera, or data such as your account information, browsing history, contacts and calendar. Search *privacy settings* in the Windows search bar (not in a Web browser search bar).

Some settings that can be important to your privacy are not found in the privacy settings, so consider these other settings:

- To turn off settings syncing, got to Settings > Accounts > Sync your settings. You can either turn off all setting syncing at once, or you can toggle individual sync settings off.
- To turn off notification syncing, open Cortana and go to Settings > Send notifications between devices. You can turn this off to turn off all notifications syncing, and you can also click Edit sync settings to manage your different signed-in devices.
- To keep notifications from appearing on the lock screen, go to Settings > System > Notifications & actions and turn off Show notifications on the lock screen.
- Turn off Cortana on the lock screen by opening Cortana and going to Settings > Use Cortana even when my device is locked.
- Limit Cortana on the lock screen (instead of turning her off completely) by unchecking the box next to Let Cortana access my calendar, email, messages and Power BI when my device is locked. You'll still be able to ask Cortana to answer questions that don't reveal any personal information while your device is locked.
- Hide your email address on the log-in screen by opening the Settings menu and going to Accounts > Sign-in options > Privacy. Turn off the toggle under Show account details (e.g. email address) on sign-in screen.
- To turn off personalized ads in Windows 10, go to Settings > Privacy > General and toggle off Let apps use advertising ID. You'll still see ads, but they won't be personal.
- To opt out of personalized ads in more places, go to https://choice.microsoft.com.

10 TROUBLE ONLINE

10.1 TROUBLESHOOT WEBSITE PROBLEMS

Sometimes you may have problems connecting to a website. This could be caused by a variety of factors:

- ü Check that you are connected to the Internet. In Windows 10, check your connection in the Taskbar.
- ü Try to visit another website. If other sites work, the site you are visiting may be having problems.
- ü Make sure you have entered the URL correctly. Use a search engine to find it.
- ü If you get a "page not found" or "404" error, the page may have been moved or deleted from the site. Use your navigation skills to find the page using site menus or the site search.
- ü If you found the page but something within the page seems broken, try using a different browser.

10.2 IS THIS SAFE?

You should always be careful about entering personal information on any website. Sometimes the pages aren't safely constructed and sometimes they may be intended to deliberately steal your information.

> Ø Watch "Online Scams" at DigitalLearn.org.

Tips:

- ü Don't click a link in an email without carefully verifying the URL that it goes to. Phishing scams disguise an email as an official message from a bank or other service urging you to sign in to your account to fix a problem, but the link sends you to a look-alike site just for gathering your username and password. If in doubt, use a search engine to find the website the email is trying to get you to visit, sign in to your account, and look for any problems.
- ü Don't open email attachments if you're not sure that they are safe.
- ü Be careful visiting unfamiliar websites. How did you get to the site? Did you just accept the top search result without deeper investigation? Before you fill out a form with personal data on a website, or download anything from a site, be sure that it is the correct site, not just a top search result.
- ü Don't click OK or Yes blindly! Read any messages before clicking an action button, and search the text of the message if you don't understand what it means or why it appeared.

- ü Customize privacy settings on the services you use. Don't just go with the defaults. Even then, share only the information required to make a service work.
- ü Use common sense: if a site promises something that sounds too good to be true, it probably is.
- ü Check the "about" or FAQ pages to find out who is behind the information. A reputable website will have this information and include some way to contact the owner.
- ü Before you buy something online, research the seller. They should be up-front about their return policy, refunds, shipping costs, and other customer service policies.

Ø Visit onguardonline.gov to review some safety tips from the Federal Trade Commission.

> *The library offers many online resources to help you learn to use a computer. Please see our Computer Skills Subject Guide—* **knoxlib.org/computerskills**—*for tutorials in Testing and Education Reference Center, Lynda.com, Safari Books Online, and websites such as GCF Learn Free. Also, you can make an appointment for more personal help such as setting up email, filling out job applications, and working on documents.*