Level Up

Through **Digital Discoveries**

6

McGraw Hill

binarylogic

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Contents

Key Features

An innovative approach to building digital competencies, developed by expert educators.

Each unit offers straightforward explanations and contemporary examples, making technology concepts accessible and relevant.
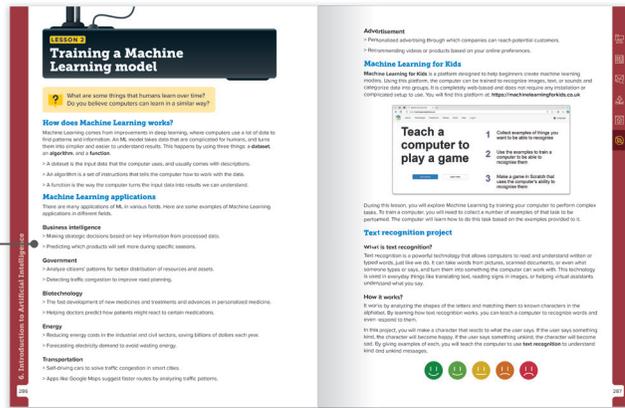
Curriculum aligns with the latest industry standards, preparing students for certifications and future careers.

Every unit includes a variety of tasks and activities designed to help students build essential digital competencies.

Projects and exercises throughout the course reinforce students' understanding and practical application of digital skills in real-world scenarios.
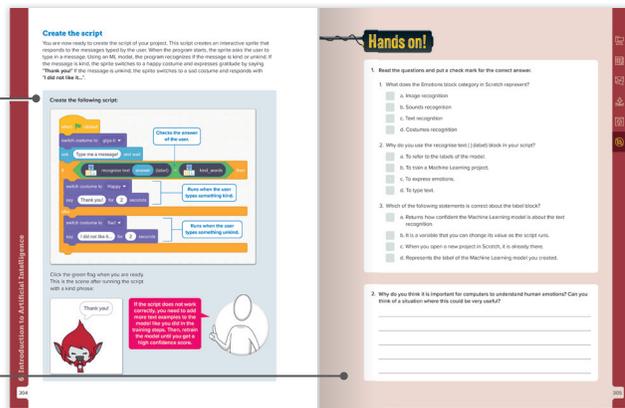
Well-defined learning goals and hands-on, applicable digital skills.

Students learn about platform diversity, expanding their digital toolkit and adaptability.

Each unit organizes key terms that are crucial for digital literacy, equipping students for today's technology-driven workplace.

1. Learning the basics

Computers play a significant role in everyday life, aiding in work, learning, and leisure by making tasks faster and more efficient. Understanding how computers operate offers skills that allow for more confident navigation of the digital world. This unit covers the main components of a computer, including hardware such as the CPU and RAM, as well as software like the operating system. The unit also explores methods for organizing files and folders, modifying basic computer settings, troubleshooting issues, and using tools like the Task Manager to manage programs effectively.

Learning Objectives

In this unit, you will:

> identify key computer components such as CPU, RAM, and storage devices.

> identify the differences between hardware and software and what their roles are in computing.

> identify what an operating system is and why a computer needs it.

> use an operating system and change its basic settings.

> create and organize files and folders on a computer.

> compress a file or folder so that it uses less memory.

> identify and edit a file or folder's properties.

> use Microsoft Windows Help.

> shut down a program that is not responding using Task Manager.

Tools

> Microsoft Windows

LESSON 1
Computers and devices

? What types of computer devices do we use in our everyday lives? Which of these are essential for students today?

It's the 21st century, and we use computers in every aspect of our lives. You can find them almost everywhere, including your school, at home, and in the workplace. Even smartphones are small computers.

But what exactly is a computer? A computer is an electronic device that can store, retrieve, and process data. You can use it to write documents, draw images, listen to music, stream movies, communicate with friends, and much more.

Today, various types of devices are available on the market, differing in size and power. The most common term used is "PC," which stands for "Personal Computer." Personal devices are often found at home or school. However, computing technology is integrated into many everyday objects, including phones, ATMs, electronic toothbrushes, cars, and even washing machines.

Desktop computers

Desktop computers are found in households and workplaces, available in a range of sizes. A desktop system is not just one device, but a combination of different components that work together to make a complete computer.

The advantage of desktop computers is that they can be upgraded. You can remove the parts that are old and replace them with new parts. This way, you can update your computer without having to buy a whole new device. Some desktop computers have a built-in monitor. These are called all-in-one desktop computers.

Monitor

The "tower"

External computer devices

Storage device
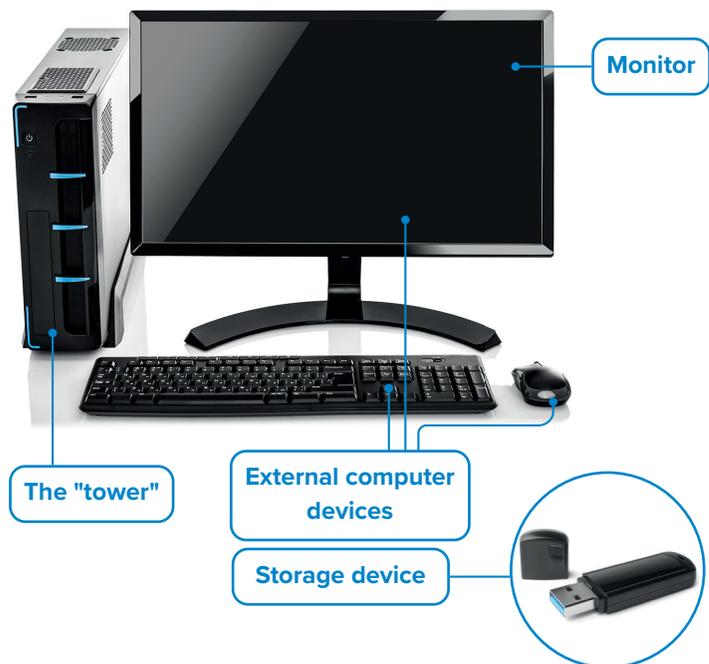
History
Although the first automatic calculator was invented by French mathematician Pascal in **1642**, the first computer was the ENIAC (Electronic Numerical Integrator and Computer). It was built in **1945**, measured **167 square meters**, and weighed **30 tons**.

For Review Purposes Only

Laptop computers and notebooks

Laptop computers are portable PCs that you can carry almost anywhere. They are small and light, and they use a battery. Modern laptops typically have a battery life ranging from 5 to 20 hours. However, it is still a good idea to carry the charging cable with you, especially for extended use.

Laptop computers and their parts are so small that it is not easy to upgrade them. You may upgrade their memory or hard disk, but to make other changes, you need the help of an expert technician. You can connect external devices like printers, keyboards, or USB drives to laptops.

A notebook is a type of laptop that is smaller in size.

Servers

A web server can be a small computer or a powerful one for many users.

A server is a computer that provides different services to other computers. For example, a file server is a computer where all the students in a school can store their files, and a web server is a computer that stores the information you access when you browse the Internet. When you click a link, the web server sends the page you requested to your computer.

Other types of computers

Supercomputers are very powerful computers with the ability to handle and process vast amounts of data. They are usually very big and can perform millions of calculations at the same time.

Tablet computers are portable devices that use a touch screen for input, and they usually do not have a physical keyboard. The concept of a tablet PC goes back to the 1960s. The first tablet with Microsoft Windows was created in 2001, but they didn't become popular until 2010 when the Apple iPad was released. Today, there is a wide variety of tablets with different operating systems, like **Android**, **Microsoft Windows**, and **iPadOS**.

Smartphones are like small computers. You can use a smartphone to make phone calls to your friends or your grandmother, and you can also browse the Internet, send and receive email, chat with friends, and play games.

Game consoles allow you to play video games. Today, the latest consoles let you browse the Internet and play online games.

Hardware and software

Often, when we think of computers, two things come to mind: hardware and software.

Hardware is the electrical and mechanical parts of a computer. It is all the parts that make up the computer, like the monitor, the motherboard, the chips, etc.

Software is the collection of all the programs that are installed on a computer. These are programs that you need in order to operate your computer, such as the operating system or applications that you need to be able to work, like **Microsoft Word** or **Microsoft Edge**.

First, we will explore the different parts of the hardware. Let's find out what's inside.

The main parts of a computer

In order to function properly, a computer needs specific pieces of hardware: a motherboard, memory (RAM), a CPU (Central Processing Unit), and a storage device (often a hard disk drive). Then, you need a monitor, a keyboard, and a mouse to work with your PC.

The **motherboard** is the main circuit of the computer, which all the other parts are connected to. The CPU, memory, hard disk drive, and external devices are all connected to the motherboard. The motherboard's job is to make all these parts communicate and work together.

The **CPU (Central Processing Unit)** is the "brain" of your computer. It is the part that performs all of the arithmetic, logical, and input/output operations so that your computer can operate correctly. The faster the CPU, the more data it can process in a short period of time. The speed of a CPU is calculated in Hertz (Hz). The speed of a CPU is calculated in Hertz (Hz). In other words, we measure the number of instructions a CPU can process in one second in Hz. Modern CPUs are so fast that CPU speeds are often measured in gigahertz (GHz). This means billions of instructions per second.

The CPU consists of two parts that work together: the ALU (Arithmetic and Logical Unit), which performs all the calculations and logical operations, and the CU (Control Unit), which controls and decodes the data passed between the memory and the CPU.

> **All the data in the CPU and memory is stored using electricity. So, when the computer is turned off or there is a power failure, this data can be lost.**

Fan

Motherboard

CPU

CPU
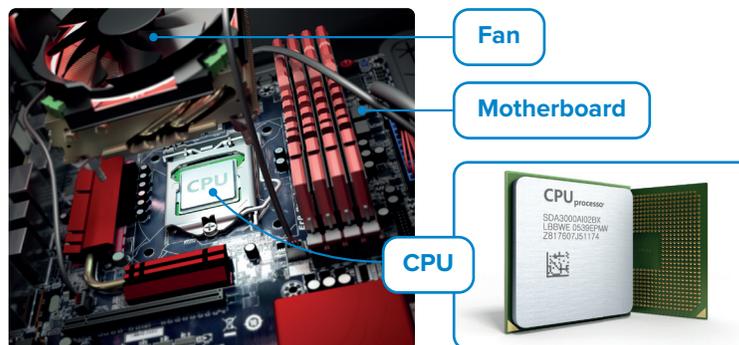
💡 Smart Tip

The BIOS (Basic Input/Output System) is the initial program that runs when you start your computer. It performs the important task of identifying and initializing all the devices connected to your computer, ensuring they are ready for use.

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The main memory of the computer is called **RAM** (**Random Access Memory**). RAM is used for the information (data) that is being processed by the CPU. This data is stored for a very short period of time. The amount of memory plays an important role in determining a computer's performance and speed. Even if a computer has a fast CPU, not having enough RAM can make it run slowly.

Apart from RAM, computers have other types of memory, like ROM or CPU cache memory. ROM stands for Read-Only Memory, and it stores data that cannot be changed or erased. CPU cache memory is high-speed memory that's inside the CPU and stores the most frequently used data.

RAM

Video Card

The "tower"
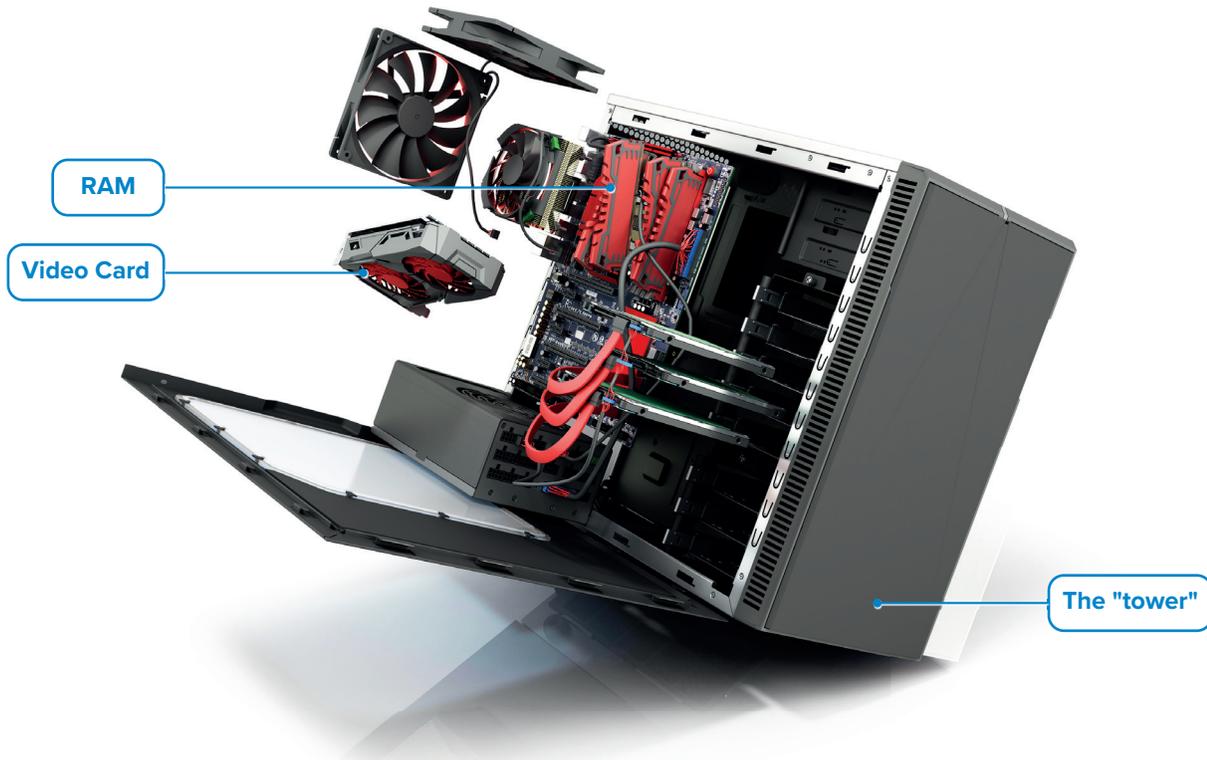
The **Hard Disk Drive** (**HDD**) is the main storage device of your computer. It is used to store and retrieve information. All the programs, including the operating system, and all the files that you have created or copied from other devices are stored inside the hard disk drive. The main characteristic of a hard disk drive is that it can store an enormous amount of information. For example, if a hard disk drive holds 32 terabytes (TB) of data, that means it can potentially store millions of songs, photos, or e-books.

The **Graphics card** (also known as a **video card** or **display adapter**) turns the data processed by the CPU into images on the monitor. The better the graphics card, the better the quality of the images. This is especially evident in computer games. Modern graphics cards are like small computers, with their own CPU and fast memory, which helps reduce the load on the main CPU.

Sometimes, the graphics card is integrated into the motherboard. A computer with an integrated graphics card is sufficient if you don't need a powerful graphics card for gaming or video editing.

Peripheral devices

Peripheral devices are external components connected to a computer, which can be removed or replaced without affecting the computer's core functionality. In other words, they increase the computer's capabilities, but they are not necessary for a computer to function. Peripheral devices are divided into three categories: input devices, output devices, and input/output devices.

Input devices

Input devices are devices that help the user input data, such as text, images or sound, or control the computer.

Keyboard

The keyboard is one of the main input devices. Through the keyboard, the user can input text and give commands to a computer.

Mouse

The mouse is a pointing device that helps the user point to objects on the screen and execute commands by clicking on them. A typical mouse has two main buttons, but many modern mice have more buttons that help you execute frequently used commands with one click.

Gamepad

A gamepad is a game controller that helps you give commands and move on the screen. If you play video games, you already know about gamepads. Usually, a gamepad has a cross pad or a controller stick and action buttons.

Microphone

A microphone helps you record your voice or other sounds, save it in digital form, and then make changes with audio editing programs.
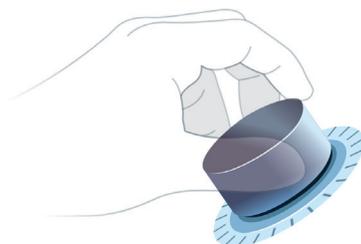
Control knob

A control knob is peripheral device designed to support creative work. It allows users to access shortcuts and tools by pressing and rotating the dial, increasing productivity.

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Drawing tablet

A drawing tablet (graphics tablet) allows users to create digital art and input handwriting or sketches using a stylus (pen).

Motion sensor

A motion sensor detects body movements, gestures, and voice commands. It is commonly used for gaming, motion capture, and as an alternative input method for individuals who are unable to use a mouse or keyboard.

Digital camera

With a digital camera, you can take photos or videos of yourself and your friends. Later, you can store your photos or movie clips on your computer.

Web camera

With a web camera, you can make video calls and talk to your friends, no matter where you are. Most webcams are built into the top of laptop screens or inside desktop computer monitors, so you don't need a separate camera.

Scanner

A scanner allows you to scan documents, photos, or even small objects, and you can store them in digital form on your computer.

Pointing devices

Pointing devices do the same job as a mouse, but they come in different shapes. For example, a touchpad is a pad that you use to control the pointer on your laptop. A track ball is a mouse that has a ball on top of it, which you roll in order to move the pointer.

Input devices for accessibility

Input devices designed for accessibility help people with disabilities interact with computers and technology. **Eye trackers**, for example, detect and follow the movement of a user's eyes to control screen elements or provide input. These devices offer hands-free navigation for individuals with limited mobility.

Other examples include **adaptive devices** such as switches, sip-and-puff controllers, and specialized keyboards. These tools are highly customizable to meet the unique needs of each user. **Brain-Computer Interface** (BCI) technology allows users to control devices using brain signals. These innovations continue to make technology more inclusive and empowering for everyone.

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Output devices

Output devices are the devices that are connected to your computer and provide you with the results of data processing. Some types of output are text, graphics, audio, and video.

Monitor

The monitor or screen or VDU (Visual Display Unit) is the main output device of a computer. It provides a visual display of the user's interaction with the computer.

Virtual Reality (VR) headset

Virtual Reality (VR) is a computer-created simulation of a real or imaginary place. It lets users explore and experience a completely digital world. People wear a VR headset to look around, move, and interact with objects in this artificial world. VR is often used for games, learning, and training.

Printer

We use a printer to print the results of data processing, like documents or photos, on paper. There are inkjet printers, which use liquid ink to print on paper, and laser printers, which use dry ink (toner).

> **Laser printers are faster and produce documents with better quality than inkjet printers.**

Speakers

We use speakers to listen to music from our computer or listen to the sound from video games or movies. You can use two speakers for stereo sound, or you can have more speakers (five or more) to experience surround sound.

History

In the past, there were separate devices for computers and entertainment, like computer monitors and televisions. But today, these technologies overlap. For example, a computer monitor can now be used for both doing homework and watching movies, and televisions can be used for browsing the Internet and sending emails.

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Input/output devices

These devices can both input data to and output data from your computer. Although they were not very popular in the past, their usage has increased over time.

Touch screen

Most people are familiar with touch screens. This technology allows users to input data directly with their fingers while observing the results on the screen at the same time. Many devices, such as tablet PCs and smartphones, rely on this technology, which has become increasingly prevalent in everyday life, from self-checkout kiosks in stores and touchscreens at fast food restaurants to smartboards in classrooms.

Augmented reality (AR) headsets

Augmented reality (AR) headsets are special devices that add extra digital information, like 3D pictures, animations, and videos, to what you see in the real world. These headsets often have transparent displays that place digital objects into your surroundings, allowing you to interact with them in real time. They use high-quality screens and advanced sensors to blend digital and real-world images, letting you switch between experiences. You can control them using your hands or voice, making them easy to use.

AR headsets are used in workplaces, such as factories or design studios, to help people solve problems, create objects, or learn new skills by interacting with 3D models. They are also popular for personal activities, such as watching videos, playing games, or working on creative projects like drawing or editing. AR headsets make learning, working, and engaging with content more interactive.

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Storage devices

Storage devices help us store data not only on our computer, but also on external devices, in order to move it to other computers. Storage capacity and reading/writing speed are the most important characteristics of storage devices.

We measure storage capacity in bytes. Bytes are like liters for liquids. The more bytes a device can hold, the more data it can store. To make it easier to understand and work with storage capacity, we use multiple units, such as bytes (B), kilobytes (KB), megabytes (MB), gigabytes (GB), and terabytes (TB).

Data storage units	
Unit	**Equals**
Kilobyte (KB)	1 KB = 1024 Bytes
Megabyte (MB)	1 MB = 1024 Kilobytes
Gigabyte (GB)	1 GB = 1024 Megabytes
Terabyte (TB)	1 TB = 1024 Gigabytes
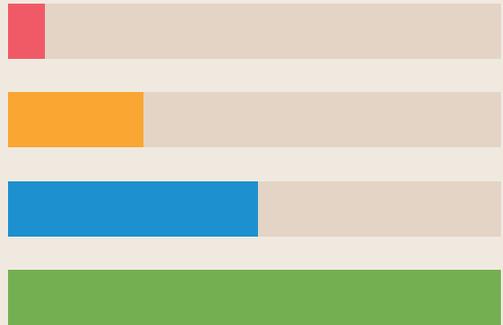
When you type in Notepad, every letter is one byte of data.

Hard Disk Drive (HDD)

The hard disk drive is the main storage device of a computer. It can hold up to a few terabytes and can store thousands of movies, songs, and millions of documents. Hard disk drives are able to transfer data very fast and are separated into two categories: internal and external.

- Internal drives are installed inside the computer and
- External drives are portable drives that you can carry anywhere and connect to any computer.

Solid State Drive (SSD)

An SSD is a type of storage device found in a computer, like an HDD. It does not have any moving parts, making it smaller, more durable, and faster than an HDD.

Memory cards

Memory cards are small, portable storage devices mainly used in digital cameras and video cameras. They store photos, videos, and other data. Memory cards come in different sizes, such as SD cards and microSD cards.

USB flash drives

USB flash drives, also called USB memory sticks, thumb drives, or pen drives, are small, portable devices that store and transfer data. They are plugged into the USB port of a computer or laptop. USB flash drives are compact and can hold many gigabytes of data, making them useful for quickly transferring files. As technology improves, their storage capacity continues to increase.

Optical discs

Optical discs, such as CDs, DVDs, and Blu-ray discs, are another type of storage device. These discs require specific devices to store and retrieve data from them.

CD-RW drive

The CD, or Compact Disc, was first introduced in the 1980s. It holds about 700 MB of data and has a low risk of data loss compared to magnetic storage like floppy disks. Unlike magnetic storage, CDs do not store data magnetically, which means if they are near electromagnetic sources they will not experience data loss.

DVD-RW drive

The DVD, or Digital Versatile Disc, is an evolution of the Compact Disc, with greater storage capacity. Both sides of the disk can be used, each with two data layers. Using dual-layer technology, data is written from the inside out on the first layer and from the outside in on the second. A standard DVD holds 4.7 GB, while a two-sided, dual-layer DVD can hold up to 17 GB.

Blu-ray drive

The Blu-ray Disc (BD) is the evolution of the DVD. More data can be stored than on a DVD, and the surface of the disc is more scratch-resistant. A Blu-ray Disc can hold up to 50 GB of data, which is 70 times more than a CD.

⧖ History

The floppy disk, introduced in the 1970s, was the first widely used external storage device for computers. It was portable and easy to use, but it had limited storage capacity and was prone to data loss and physical damage. Despite these drawbacks, floppy disks were important in the early days of computing and led to advancements in storage technology.

Hands on!

1. **Read the following sentences and put a check mark for True or False.**

	True	False
1. CPU cache memory deals with the most frequently used data.	☐	☐
2. Laptop computers are generally easier to upgrade than desktop computers.	☐	☐
3. The CPU, the memory, the Hard Disk Drive, and any peripheral devices are all connected to the graphics card.	☐	☐
4. A Blu-ray Disc can hold up to 50 GB of data.	☐	☐
5. The Hard Disk Drive (HDD) is more reliable and faster than the Solid State Drive (SSD).	☐	☐
6. A touch screen is an input device because it allows you to input data to your computer with your fingers.	☐	☐
7. ROM stores data for a very short period of time.	☐	☐
8. Augmented reality (AR) headsets enhance interaction with digital and real-world environments.	☐	☐
9. The BIOS is a part of the hardware and not the software.	☐	☐
10. Software is a collection of all the programs that are installed on a computer.	☐	☐
11. The ALU (Arithmetic and Logical Unit) controls and decodes the data from the memory to the CPU.	☐	☐

2. Read the questions and put a check mark for the correct answer.

1. When we shut down a computer, the data from which component can be lost?

☐ a. RAM memory

☐ b. ROM memory

☐ c. Solid State Drive (SSD)

☐ d. Hard Disk Drive (HDD)

2. Which of the following is an input device?

☐ a. Monitor

☐ b. Scanner

☐ c. Speakers

☐ d. Memory card

3. Which is a characteristic of a CPU cache memory?

☐ a. It is low-speed memory.

☐ b. It is inside the CPU and deals with the most frequently used data.

☐ c. It is inside the motherboard.

☐ d. It identifies and initializes all the devices that are connected to your computer.

3. What is the difference between hardware and software? Provide one example of each.

_____

_____

_____

_____

_____

_____

_____

4. Which storage device should be used to transfer the following data? There could be more than one answer.

Songs

Movies

Documents

Photos

Video games

High-definition movies

5. Provide one example of an input device, one output device, and one storage device, and explain the purpose of each. Then explain the difference between input and output peripherals.

_____

_____

_____

_____

_____

The operating system

> **?** What is an operating system? Can you think of some devices that use an operating system?

In the previous lesson, we learned about hardware. Now, it's time to understand what software is. There are two major types of software: the operating system and the applications that you use every day.

The role of an operating system

What is an **operating system** and why is it so important? An operating system helps us to operate a computer. But still, what does it do? An operating system has two main tasks to perform. The first one is to control the hardware of the computer, use the computer's "resources," and try to distribute them properly. It manages the available computer memory and allocates the amount of memory each program needs and the time the CPU will spend on a specific process. It also manages the peripheral or storage devices, handles printing needs, etc.

But the most important task of the operating system is to create the proper environment for you, the user, to interact with the computer. In other words, the operating system provides all the tools the user needs to control the computer.

Operating systems through time

Years ago, an operating system was just a black screen where the user had to type commands in order to get results—if the user knew the right commands, that is. Then, the first operating systems with a **Graphical User Interface**, known as the GUI, came out. A GUI allows you to have all your files and folders as icons and images, which you can point at with your mouse.
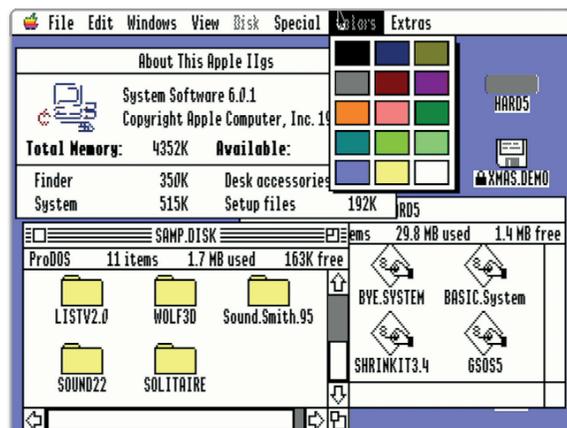
Starting a computer

This book focuses on exploring **Microsoft Windows**, an operating system designed around the use of icons that are navigated with a mouse. True to its name, every file, folder, or program opens within a window—a rectangular box that displays information about the selected item.
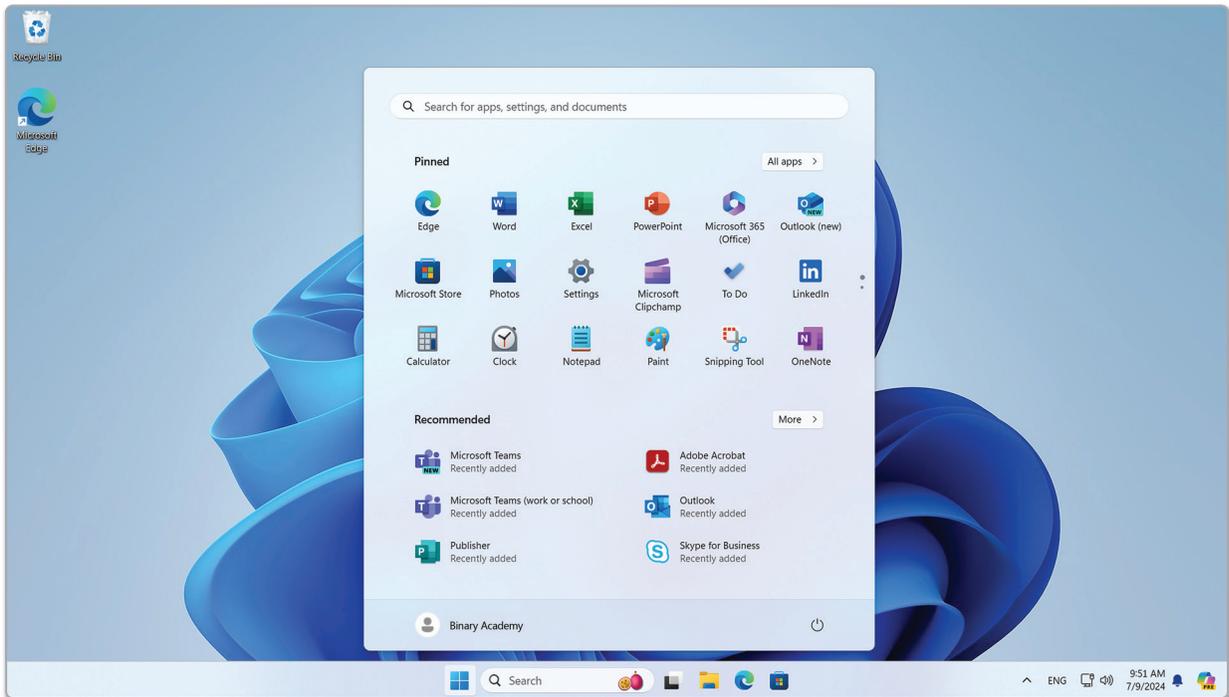
When you press the main power button, your computer will start working. After the BIOS program identifies your devices, the operating system starts. Usually, the first screen is the login screen. The login screen allows you to open the operating system as a specific user.

Because multiple people often use a single computer, it is important for each user to have their own environment, complete with personalized programs, files, and folders. To achieve this, most operating systems offer the option to create individual user accounts, which are secured by a unique username and password.

To log on to Windows:

> Type your username and then type your password. **1**

> Press **Enter ↵** or click the white arrow. **2**
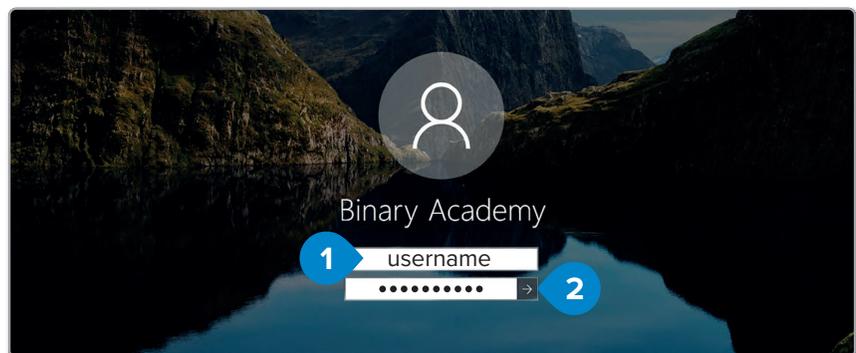
History
The most popular command-based operating system was **MS-DOS**. Later, GUI-based operating systems, like **Mac OS** and **Microsoft Windows**, were developed.

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After the login screen, the main screen of Microsoft Windows is displayed. The main window is called the **Desktop** and consists of the **Taskbar**, the work area, some icons, and the **Start** button. Generally, an operating system should be as simple as possible so that it can be used by everybody, even if they only know the basics about computers. That's what is meant by "user-friendly."

Icons
When you first install Windows, only the Recycle Bin icon is on the Desktop. Double-click it to open it.

Work area
Here is the space where you work when you open Windows.

Taskbar
Every window you open is also present on the Taskbar to be accessed whenever you want. This allows you to work with many different programs at the same time.
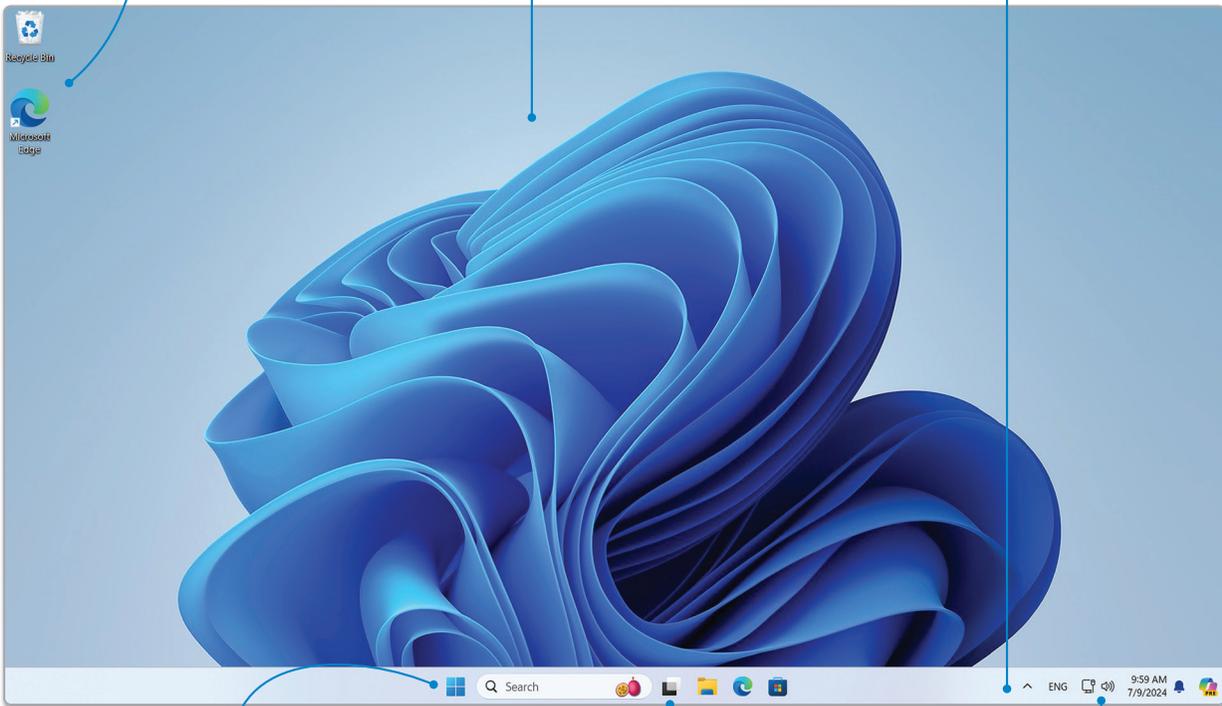
Start button
With this button you can access all the programs, folders, files, and all the tools of the operating system.

You can pin all the programs that you use often here, so you can open them with just one click.

Startup icons
Here are all the programs that start when you turn on your PC and enter the operating system. These are programs that help you work with your PC or icons that change important settings, like antivirus programs, date, time, and sound settings.

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The Main Window

Click the **Start** button to open the **Main Window**.
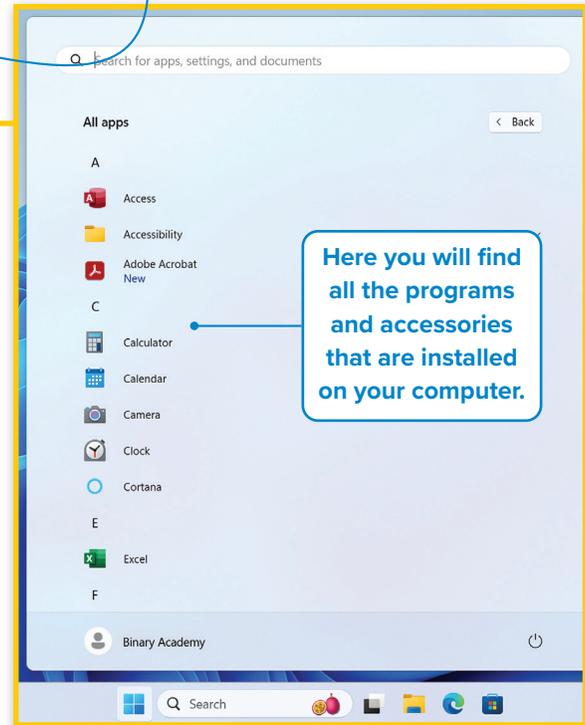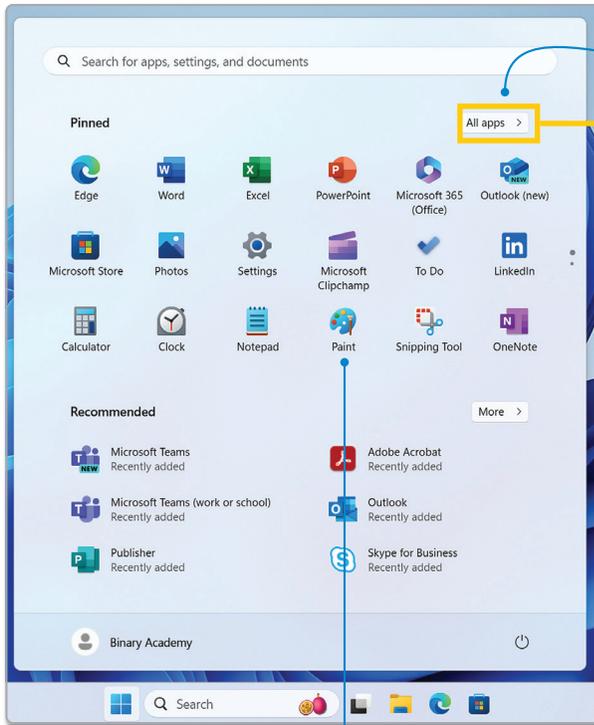
Here you will find all the programs and accessories that are installed on your computer.

In this area, you can find the programs that are pinned to the Start menu, so you can access them more whenever you want.

Shutting down a computer

Although you will only shut down your computer when you finish your work, it is one of the things you need to learn now.

To shut down your computer:

> Click the **Start** button. **1**

> Click the **Power** button, **2** and then click **Shut down**. **3**

Sign-in options let you change how you sign in to Windows, for example, with a PIN, a fingerprint, or picture password.

It is better to put your computer in Sleep mode if you want to take a break for 10 minutes, rather than shutting down.
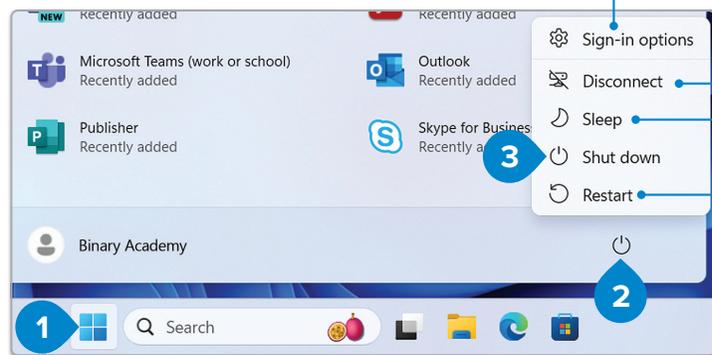
Restart shuts down and starts your computer again immediately afterward.

Sleep puts your computer in a power-saving state. The computer will resume in a few seconds when you press any key on the keyboard.

Disconnect closes all your programs and goes to the Windows login screen. Use this if you want to log in as another user.

For Review Purposes Only
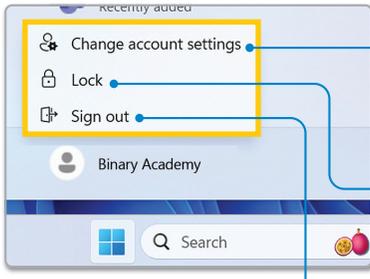
Change account settings lets you manage your Microsoft account, for example, by changing your sign-in options or setting your user account picture.

Lock locks the screen so that no one can use your computer while you are away.

Sign out closes all your programs and goes to the login screen of Windows. Use it if you want to log on as another user.

Starting a program

The first step in using an operating system is learning how to start programs and open the files or folders needed for your tasks. Let's begin by creating a drawing in Paint and saving it.

To open Paint:

> Click the **Start** button, ❶ click **All apps**, ❷ and scroll down the sidebar.
> Click **Paint**. ❸
> The **Paint** program will open. ❹
> Draw whatever you like. ❺
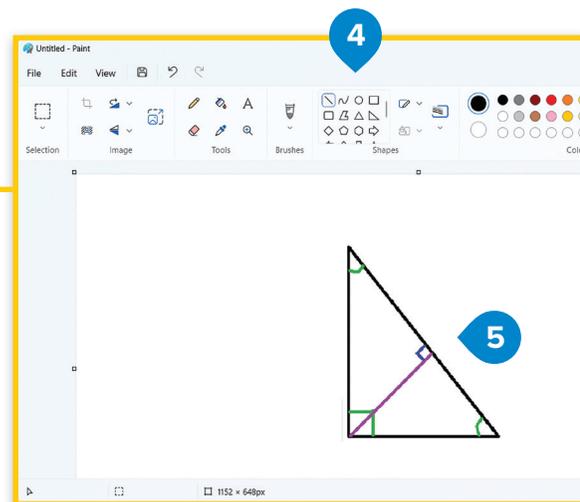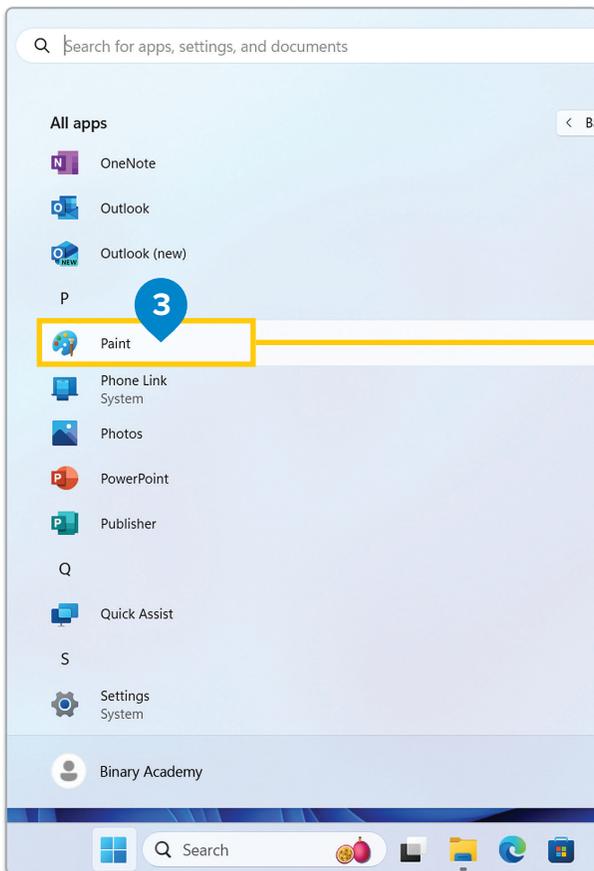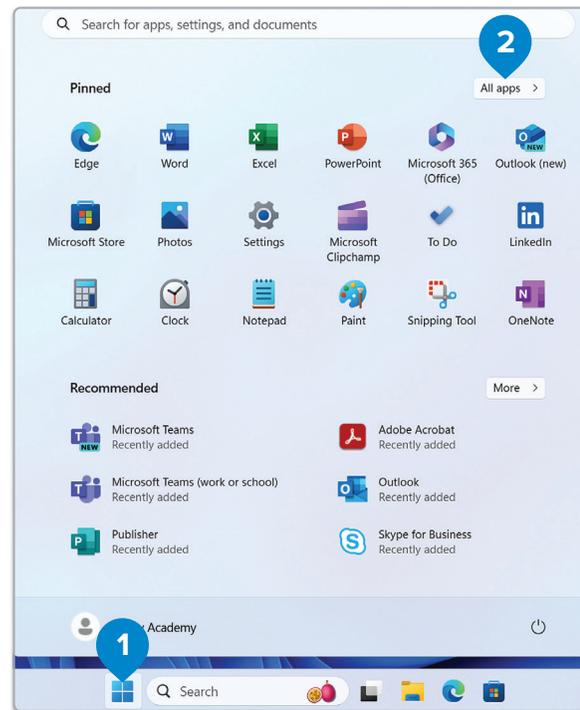
Another way to open a program is to click the **Search** icon and type the name of the program you want to open. When you find it, click it or press Enter ↵ .

For Review Purposes Only

Saving your work

When you finish your work, save it. When you save, you create a file that is ready to be used again or shared.

To save your work:

> Click the **File** button. **1**

> Point to **Save as**, **2** select the type of file you want to save your image as, e.g., **PNG picture**, and click it. **3**

> In the **Save As** window, type a name for your drawing in the **File name** field, **4** and click **Save**. **5**

1 Untitled - Paint

File   Edit   View

Selection   Image   Tools   Brushes   Shapes   Colors

New	Ctrl+N
Open	Ctrl+O
Import to canvas	>
Recent	>
2 Save	Ctrl+S
Save as	>
Print	>
Send	
Set as desktop background	>

Brushes   Shapes   Colors   Image Creator   Layers

3 PNG picture

JPEG picture

BMP picture

GIF picture

Other format
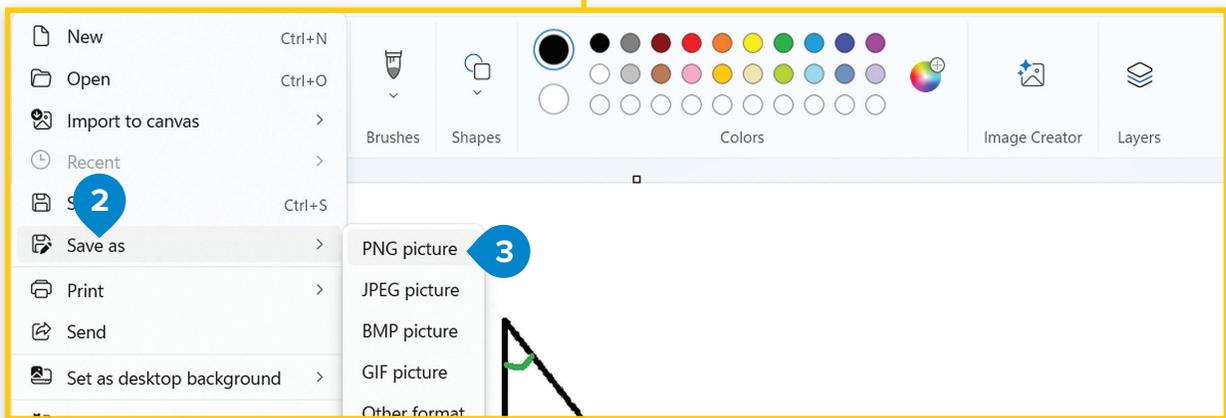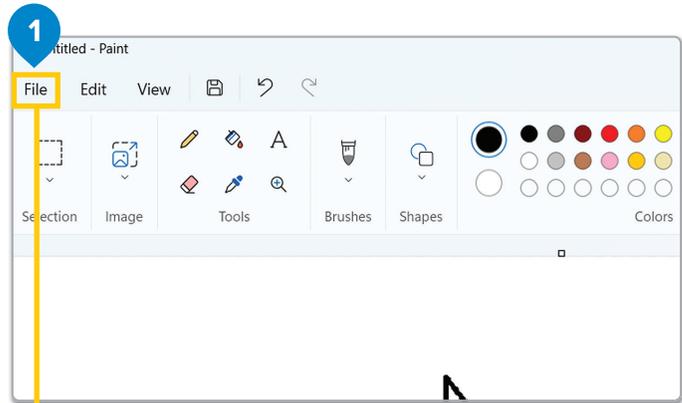
Choose where you want to save your file in one of the pinned folders.

This is the address of the folder or where this folder is located.

Save as

← → ∨ ↑   > Pictures   Search Pictures

Organize ▾   New folder

Desktop

Downloads

Documents

Pictures

Music

Videos

Camera Roll   Saved Pictures
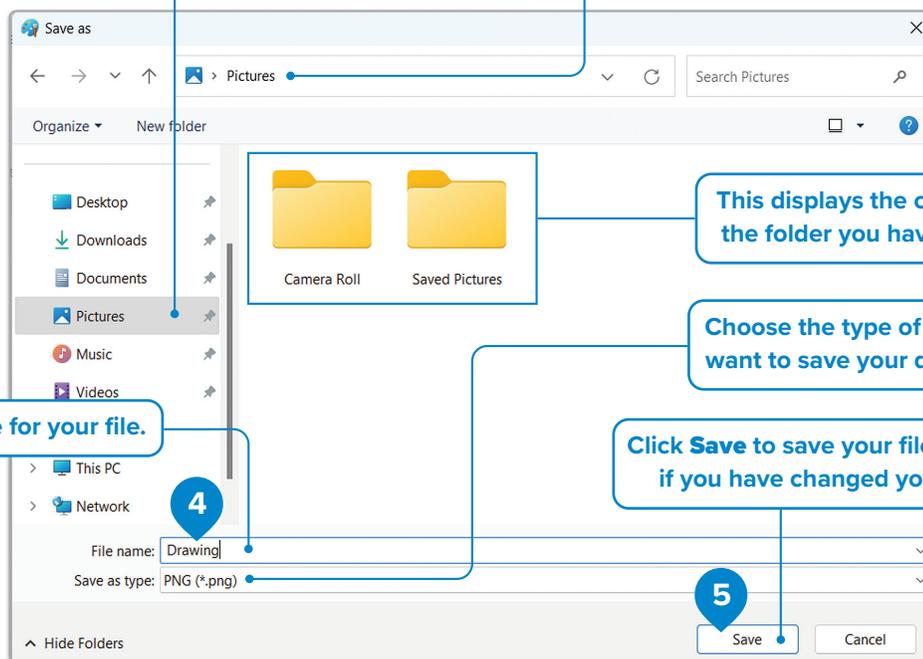
This displays the contents of the folder you have chosen.

Choose the type of image you want to save your drawing as.

> This PC

> Network

Type a name for your file.

Click Save to save your file or Cancel if you have changed your mind.

4

File name: Drawing

Save as type: PNG (*.png)

5

Save   Cancel

Hide Folders

Displaying file contents

You can access information about the contents of a file in a folder without opening it.

To preview the file contents:

> Click the **File Explorer** icon, **1** and then click **Documents**. **2**

> On the **View** tab, **3** click the **Preview pane** button. **4**

> Click the file you want in order to find out what it contains. **5**

1

Search
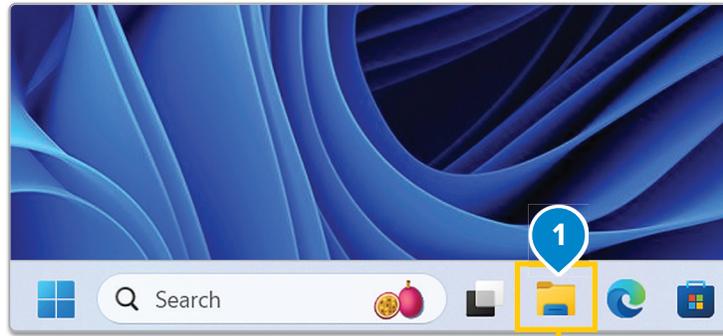
With the Back button you can go to the previous folder.

This is the location of the folder.

The Close button closes the window.

Documents | +

> Documents >

Search Documents

3

New | Sort | View | ... | Details

Home
Gallery
Binary Logic - Personal

My folder

Extra large icons
• Large icons
Medium icons
Small icons
List
Details
Tiles
Content
• Preview pane
4
Preview pane
Show >
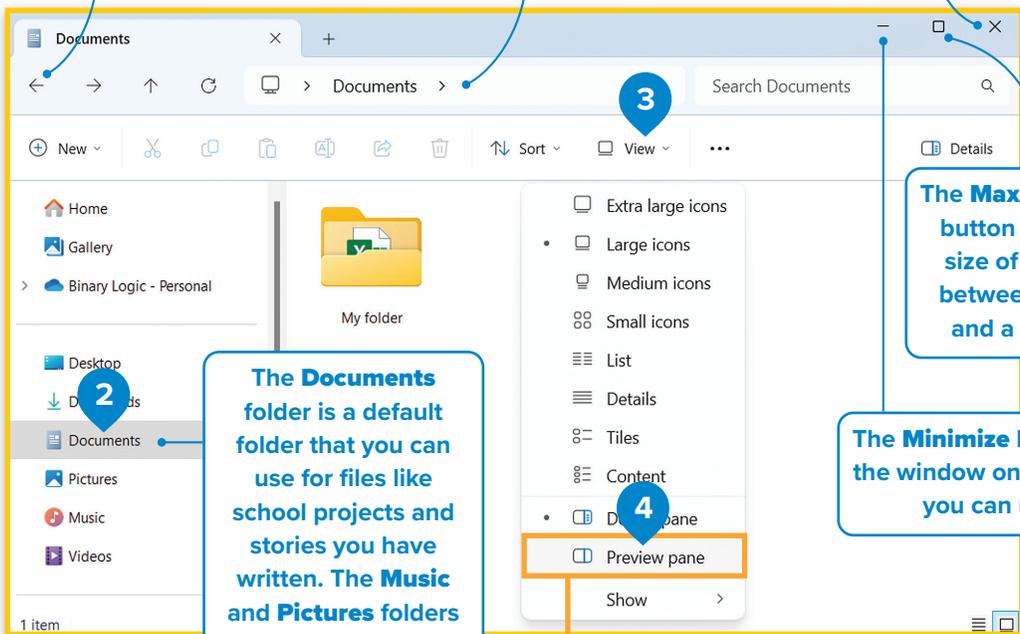
The Maximize/Restore button changes the size of the window between full screen and a preset size.

2

The Documents folder is a default folder that you can use for files like school projects and stories you have written. The Music and Pictures folders can be used for your songs and photos.

Desktop
Downloads
Documents
Pictures
Music
Videos

1 item

The Minimize button minimizes the window onto the taskbar so you can use it later.

The Preview pane button gives you access to the content of a file without opening it.

My folder | +

> Documents > My folder

Search My folder

New | Sort | View | ... | Preview

Home
Gallery
Binary Logic - Personal

W Animals | X List | W test

Amazing animals

You might think that what makes us different from animals is our ability to think and to build friendships with others, but in fact animals are capable of more extraordinary things than you might imagine. Find out why...

Desktop
Downloads
Documents

5

This PC is the place where you can find all the storage devices and the network locations that are connected to your computer.

Your hard disk drive

Your memory stick or your memory card if it is connected.
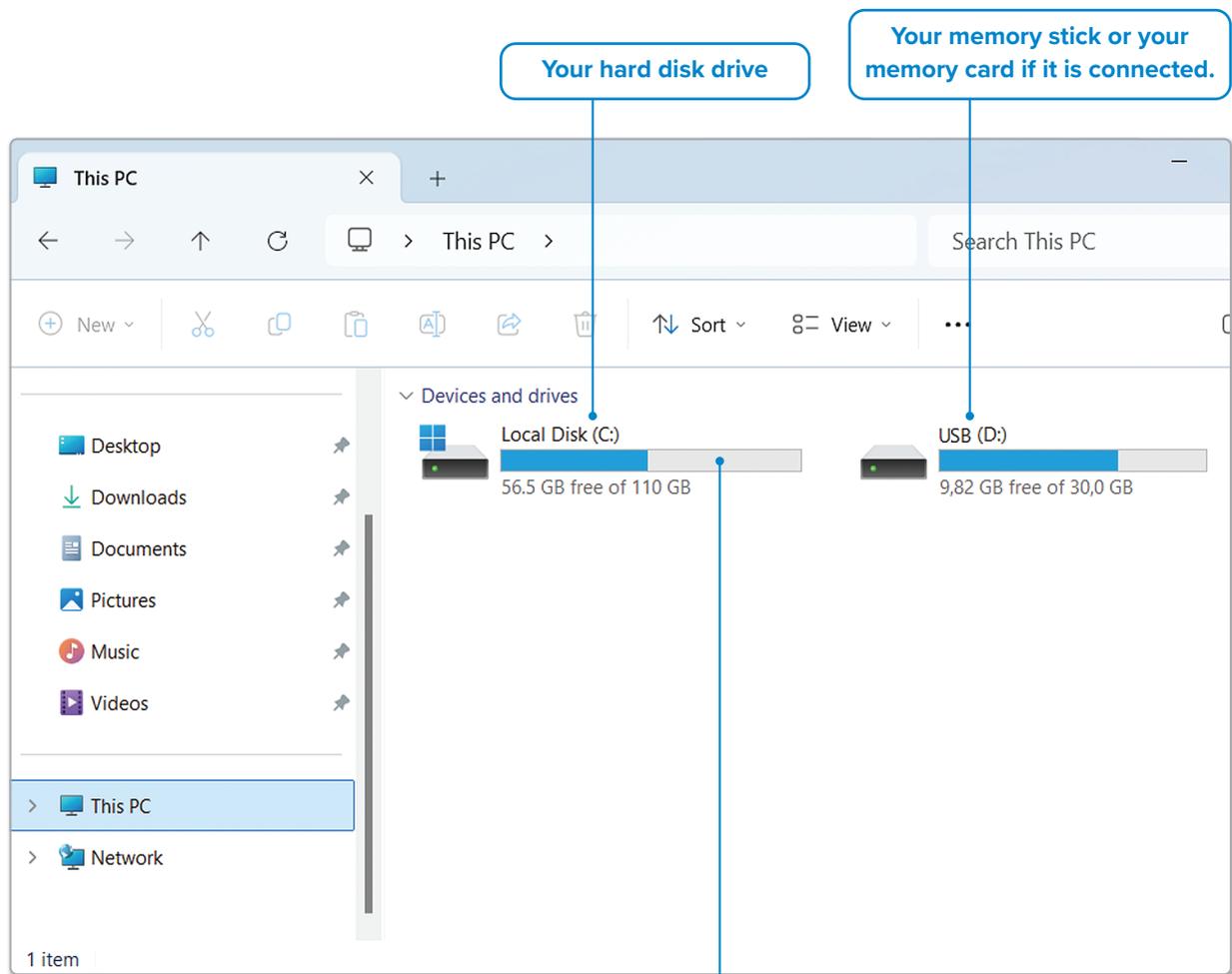
The bar beside your drive icon indicates the free space of your storage device. The blue part indicates how much space on the disk is used, and the white part indicates the free space.

Remember, a computer is not just something you learn about in school. It is a tool you can use to practice and learn new skills on your own.

Smart Tip

A folder, whether empty or containing files, is represented by a yellow icon. All the other icons are files.

1. Read the following sentences and put a check mark for True or False.

	True	False
1. The operating system is responsible for assigning CPU time to programs, making sure each program gets equal time regardless of its importance.	☐	☐
2. Graphical User Interface (GUI) systems require the user to input commands by typing them.	☐	☐
3. If two users log in to the same computer with different accounts, they will share the same desktop layout and files.	☐	☐
4. The BIOS is part of the operating system and controls how the user interacts with the computer.	☐	☐
5. The operating system needs to manage both input devices like the keyboard and output devices like the monitor.	☐	☐

2. Read the questions and put a check mark for the correct answer.

1. Which of the following is not a function of an operating system?

   ☐ a. Managing computer memory and processing time

   ☐ b. Handling printing needs

   ☐ c. Providing tools to draw images

   ☐ d. Allowing communication between hardware and software

2. What is the main difference between early operating systems and GUI systems like Windows?

   ☐ a. GUI systems don't need user input.

   ☐ b. Early systems used text commands, while GUI systems use visual elements.

   ☐ c. GUI systems do not manage hardware.

   ☐ d. Early systems had touchscreens, but GUI systems do not.

3. The "Start" button in Windows is used to:

☐ a. open all the installed programs.

☐ b. shut down the computer.

☐ c. access the operating system tools.

☐ d. All of the above.

4. Which part of the Windows screen allows you to quickly open and switch between multiple applications?

☐ a. The Desktop

☐ b. The Taskbar

☐ c. The "Start" button

☐ d. The icons

5. What does the "Preview Pane" button in the "File Explorer" help with?

☐ a. Creating new folders

☐ b. Viewing the contents of a file without opening it

☐ c. Minimizing the folder window

☐ d. Moving files to another folder

3. **Open "File Explorer" on a computer and navigate to "This PC." Find the amount of free space available on the local drive (C:). Why is it important to keep track of the storage space?**

_____

_____

4. **Imagine that you are using a shared computer with multiple users. Why is it important for each user to have their own account in the operating system? What problems might arise if everyone uses the same account?**

_____

_____

Files and folders

Keeping your computer organized

All the data in your computer is organized into files and folders. But what exactly are files and folders? A folder is a location on the hard disk drive where you can save multiple files, whereas a file (data file) is a collection of data such as text, a photo, a video, a song, etc.

Use folders to organize your files so you can easily find them. You can have a folder with some files inside, or you can have subfolders, that is, folders inside other folders.

To create a folder:

> Decide where you want to create a new folder, for example, on the Desktop.

> Right-click an empty area on the Desktop, point to **New**, and then click **Folder**. ❶

> Type a name for the new folder, and then press Enter ↵. ❷

88 View >	
↑↓ Sort by >	
↻ Refresh	
⊕ New >	📁 Folder ❶
🖳 Display settings	↗ Shortcut
✐ Personalize	Microsoft Access Database
⊡ Show more options	Bitmap image
	Microsoft Word Document
	Microsoft Access Database
	Microsoft PowerPoint Presentation
	Microsoft Publisher Document
	Text Document

My new folder ❷
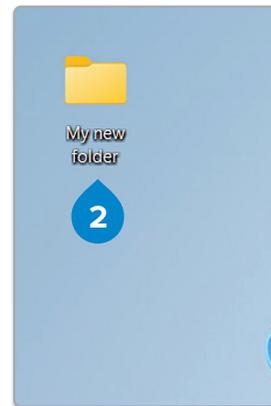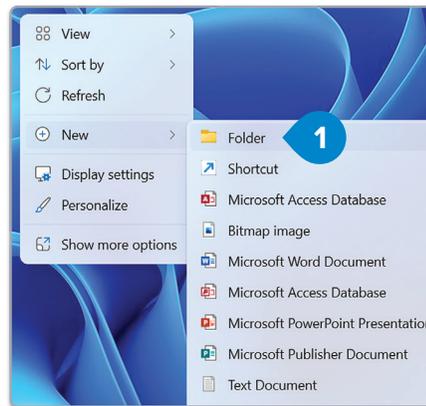
To create a folder inside another folder:

> Open the **File Manager** and then click **Documents**. ❶

> Click **New**, ❷ and then click **Folder**. ❸

> Type a name for your folder and press Enter ↵. ❹

Documents × +

← → ↑ ↻ 🖳 > Documents >

❷ ⊕ New ∨   ✂ ...

Desktop 📌
Downloads 📌
Documents 📌 ❶
My folder

📁 Folder ❸
↗ Shortcut
Microsoft Access Database
Bitmap image
Microsoft Word Document
Microsoft Access Database

My new folder ❹
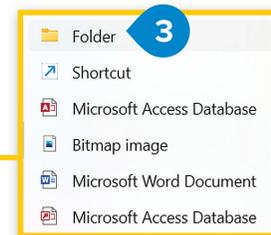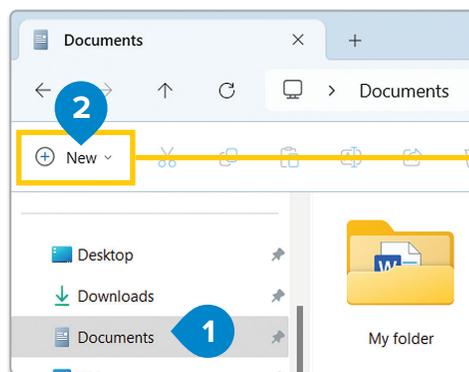
💡 **Smart Tip**

When naming files or folders, choose descriptive names to easily identify their content. Avoid generic names like file1, file2, file3, etc., as they can cause confusion.

When you have a lot of data, it is better to organize it into folders. The structure of the folders is like a tree with branches.
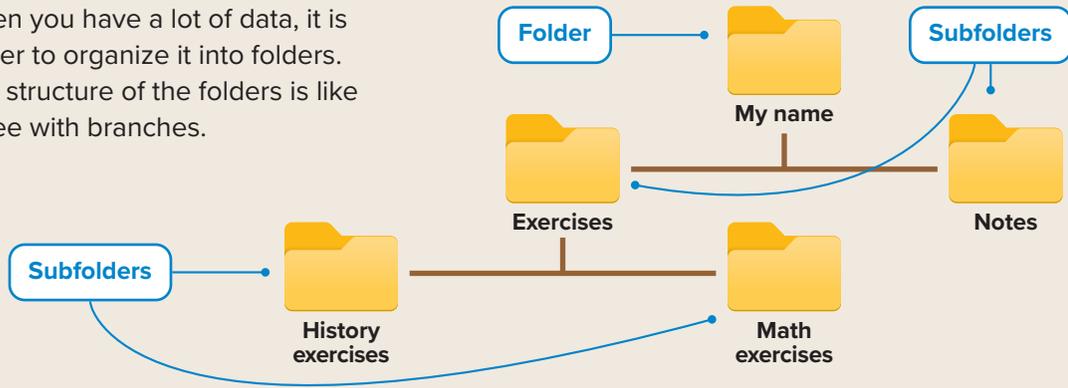
Copying and moving folders and files

If you want to rearrange the structure of your files or folders or copy them to another location, you can use the commands **Copy** and **Cut**. **Copy**, as the name indicates, copies a file or folder to another location, whereas **Cut** moves it to a new location.

To copy or cut a folder or a file:

> Locate the folder/file on your hard disk. **1**

> Right-click it and click **Copy** or **Cut** or press `Ctrl` + `C` or `Ctrl` + `X`. **2**

> Go to the place where you want to put the folder/file. **3**

> Right-click in an empty space and click **Paste** or press `Ctrl` + `V`. **4**
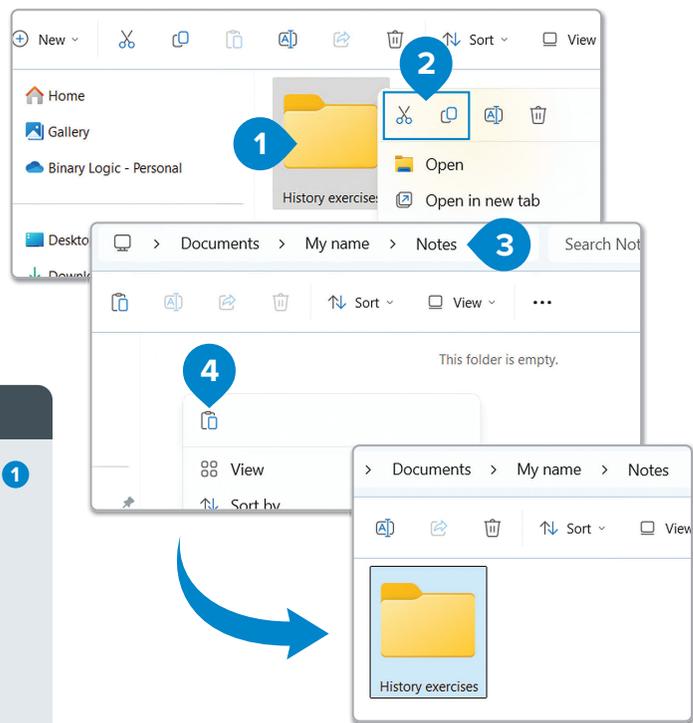
If you click **Copy**, the result will be this:
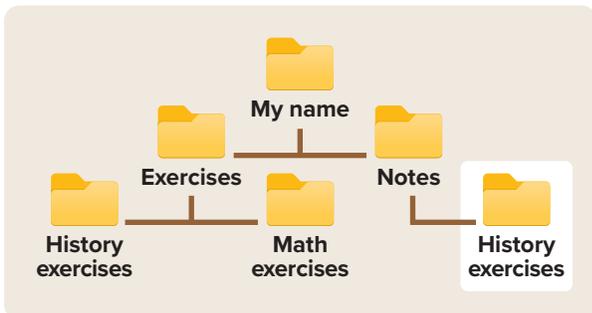
If you click **Cut**, the result will be this:
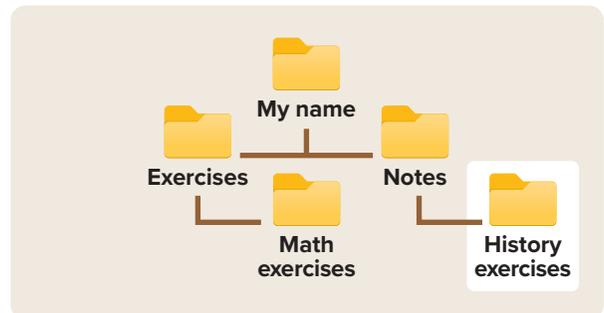
💡 **Smart Tip**

Copy, Cut, and Paste are essential commands that you will use often. It is important to learn them thoroughly since you will be using these commands consistently in every program. Select the item, copy or cut it, move to the new location, and paste it.

For Review Purposes Only

Other ways to copy or move files and folders

You've already learned the basic ways to copy or move a file or folder on your computer. Now let's find out some other ways to do it. Drag and drop allows you to move a file or a folder to a specific location with your mouse as you point at it.

To drag and drop (move) an item:

> Locate the folder/file you want to move. **1**

> In a new window, open the folder you want to move the folder/file into, and put these two windows close together. **2**

> Point to the folder/file, click and hold the mouse button, and move the mouse to the other window. **3**

> Release the mouse button. **4**

In the same way, you can move a folder/file to another folder in the same window.

If you press and hold Ctrl while dragging, you copy the folder/file instead of moving it.
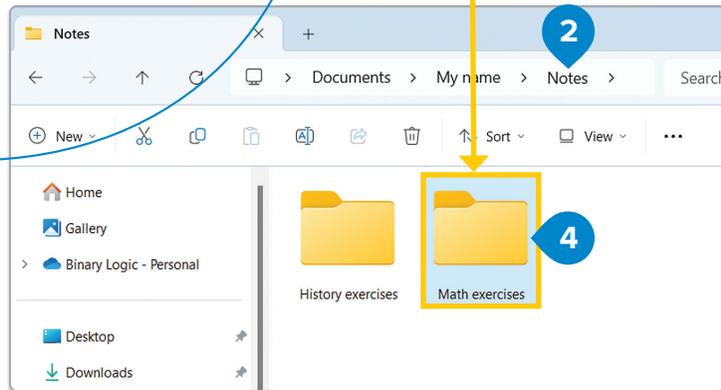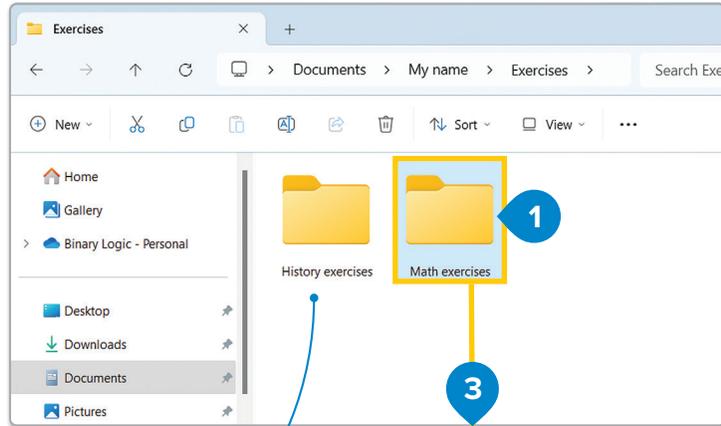
You can also copy an item directly to a storage device with a few clicks.

To send an item to a storage device:

> Locate the folder/file you want to copy. **1**

> Right-click it and then click **Show more options**. **2**

> Point to **Send to**, **3** and then click the storage device. **4**

Give access to
Restore previous versions
Include in library
Pin to Start
Copy as path **3**
Send to
  Bluetooth device
  Compressed (zipped) folder
  Desktop (create shortcut)
  Documents
  Mail recipient
  USB (D:) **4**
Cut
Copy
Create shortcut
Delete
Rename
Properties

Open
Open in new tab
Open in new window
Pin to Quick access
Pin to Start
Compress to ZIP file
Copy as path
Properties
Open in Terminal **2**
Show more options
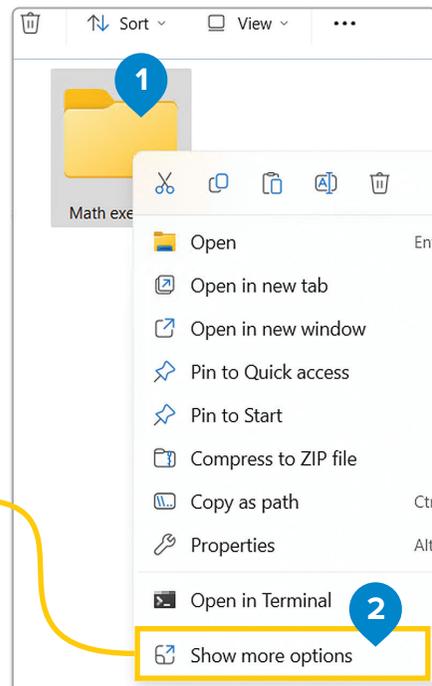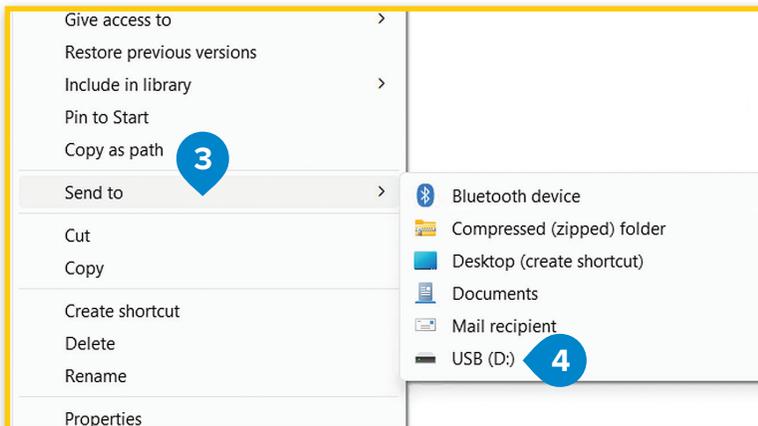
Editing folders

You can keep your computer organized by editing your files and folders. You can delete folders you don't need and rename others to help you stay organized.

To delete a folder:

> Right-click the folder you want to delete. **1**
> Click **Delete**. **2**
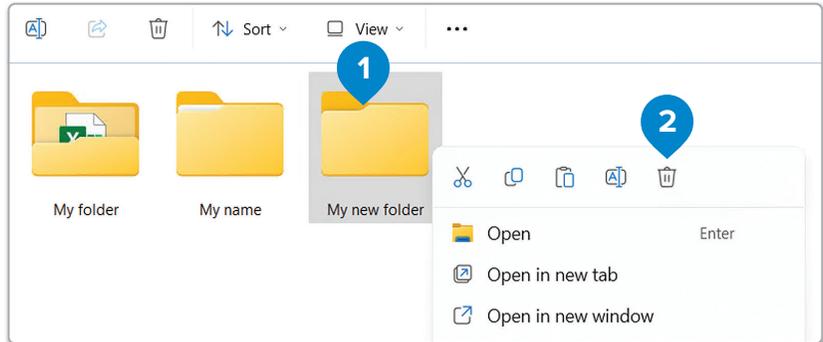
To rename a folder:

> Right-click the folder you want to rename, **1** and click **Rename**. **2**
> Type the new name and press Enter ↵ .
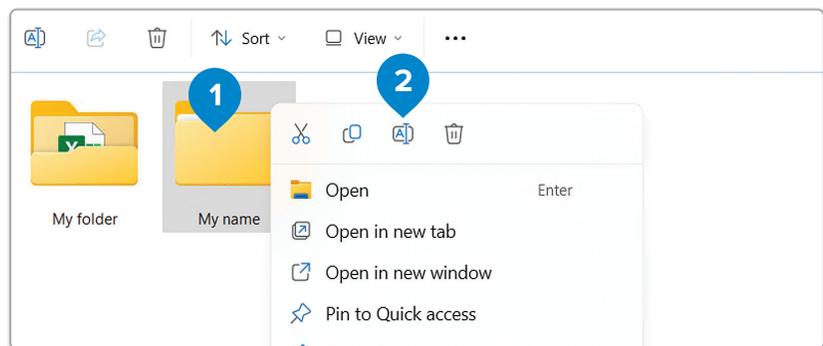
Finding a folder or a file

When you have a lot of files on your computer, it is easy to forget where you saved them.
If you need to locate a specific file, you can use the **Search** function to help find it.

To search for a file or folder:

> In the top right corner of the window, in the **Search** text box, type the name of the file you want to find. **1**
> **Windows** will automatically search for the files with this name and display them. **2**

To select a folder, click it once. To select multiple objects, hold **Ctrl** and click each one of them. Try it.
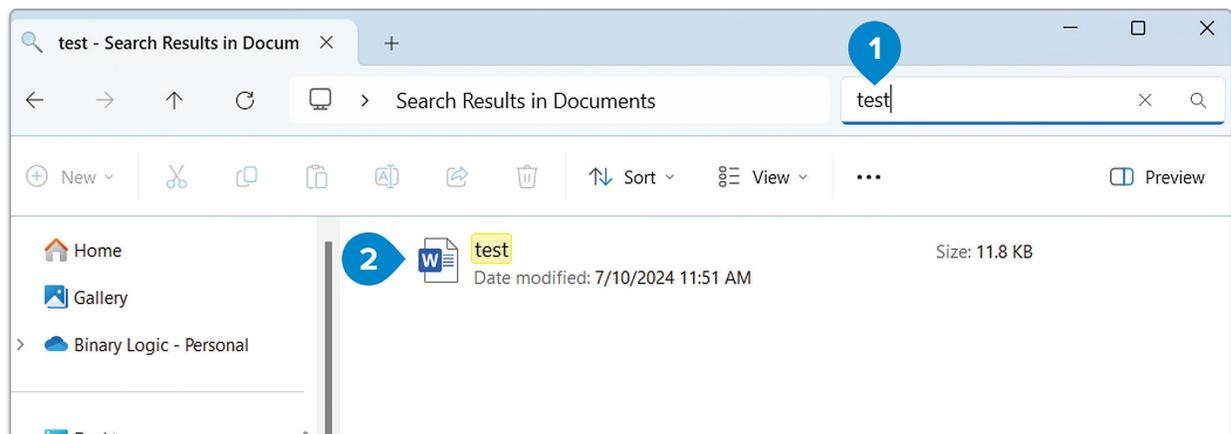
Shortcuts

When you use a file or program frequently, constantly searching for it can be time consuming. To save time, you can create a shortcut for much quicker access.

A shortcut is a "link" to a folder, file, or program. If there's a file or program you use very often, you can create a shortcut that takes you directly there.

To create a shortcut:

> Open the location of the item you want to create a shortcut to. **1**

> Right-click it and then click **Show more options**. **2**

> Click **Create shortcut**. **3**

> A shortcut will be created in the same location as the original item. **4**

> Move the shortcut to a new location using your mouse (drag and drop the icon).
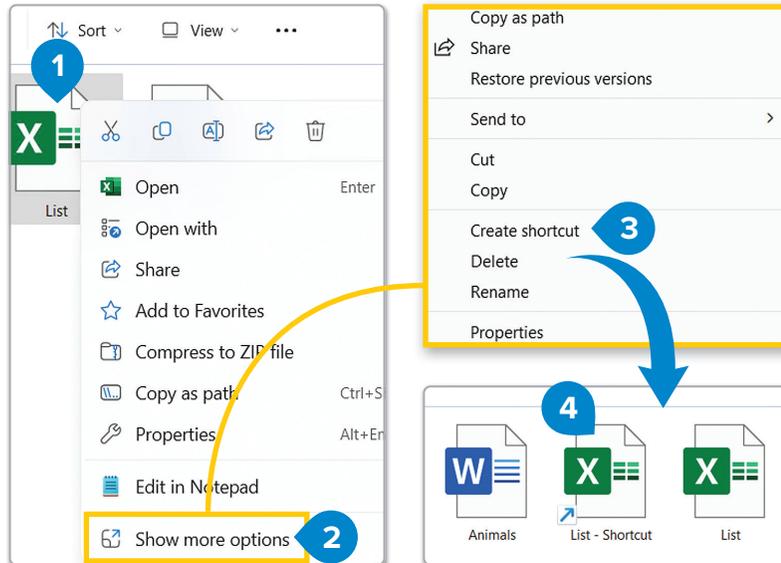
To create a shortcut directly on the Desktop:

> Right-click the file you want to create a shortcut to, **1** and then click **Show more options.**

> Point to **Send to**. **2**

> Click **Desktop** (**create shortcut**), **3** and a shortcut will be created on the Desktop.
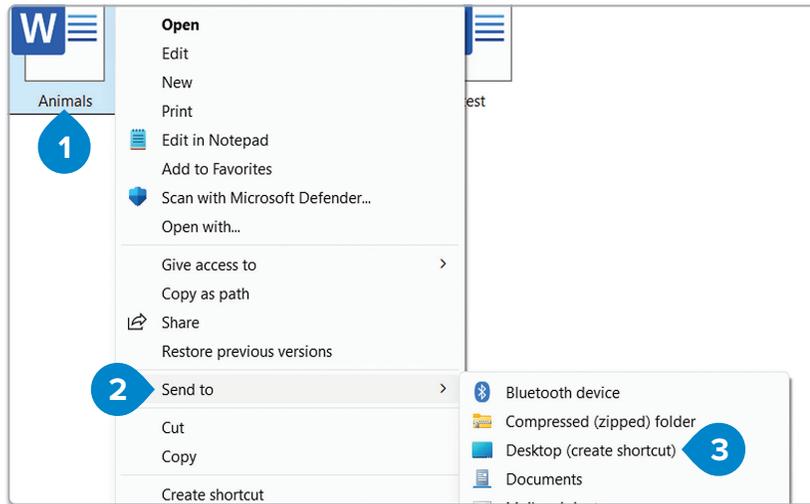
When you right-click a shortcut, there is a list of options. One of them is the option Delete. Click it and you will delete the shortcut you have created. But remember, when you delete a shortcut, only the shortcut is removed. The original file, folder, or program is not deleted.

Smart Tip

The icon of a shortcut usually has a small arrow in its bottom left corner, but not always. For example, the icons on the Taskbar at the bottom of your screen are shortcuts, but there aren't small arrows to let you know. You can pin programs and files on the Taskbar when you drag and drop their icons onto the Taskbar. To delete shortcuts from the Taskbar, just right-click them and click Unpin from Taskbar.

Compressed files or folders

Sometimes, files or folders take up too much space on your computer, and you may want to make them smaller. A compressed file, also called a ZIP file, takes up less storage space and can be easily transferred to another computer or sent by email. Compressed files or folders can be copied and moved in the same way as regular files. You can also use them like a folder. You can add more files to them, or you can delete files from them.

To compress (zip) a file or folder:

> Find the file or folder that you want to compress, right-click it, **1** and click **Compress to ZIP file**. **2**

> A new compressed file is created in the same location and with the same name. **3**
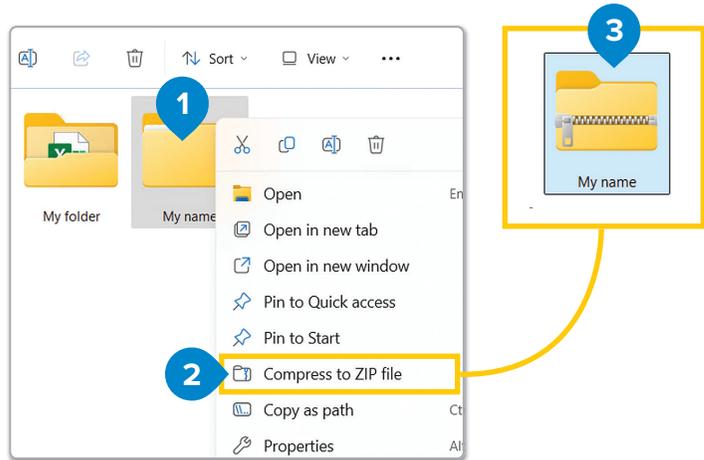
To rename a compressed folder:

> Right-click it and click **Rename**. **1**

> Type a new name and press `Enter ↵`.
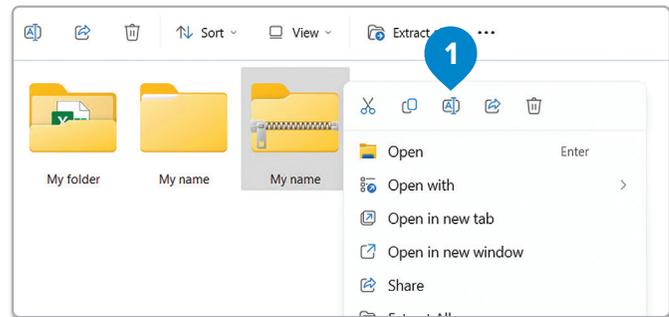
Another way to rename a file is to select the file and press **F2** on your keyboard.

If you double-click the compressed folder to open it, you will find detailed information about how the size of the files has changed. In this example, the original file was 13 KB, which became 10 KB after compression.

Name	Compressed size	Size	Type	Passwo
Animals	10 KB	13 KB	Microsoft Word Document	No
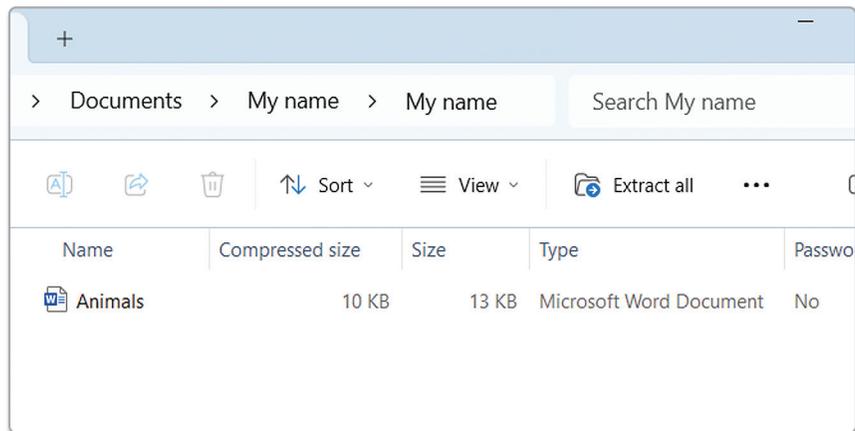
💡 **Smart Tip**

The amount of compression is not always the same and depends on the file type. For example, an image cannot be compressed as much as a text file. Image files like JPEG are usually already highly compressed, so you won't notice much difference if you compress them.

To extract (or unzip) a file from a compressed folder:

> Find the compressed folder that contains the files or folders that you want to extract, and double-click it. **1**

> Find and select the file that you want **2** and move it to the new location. **3**

My name   My name

My name

Home
Gallery
Binary Logic - Personal

2

W
Animals

History exercises

Home
Gallery
Binary Logic - Personal

3

W
Animals
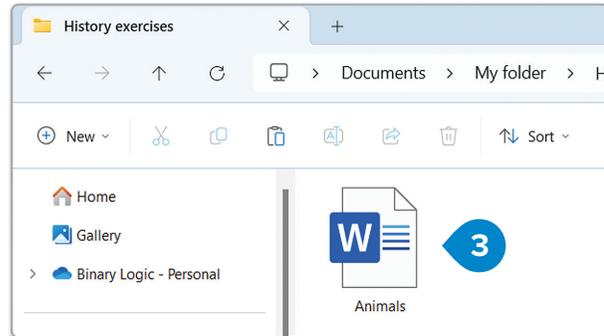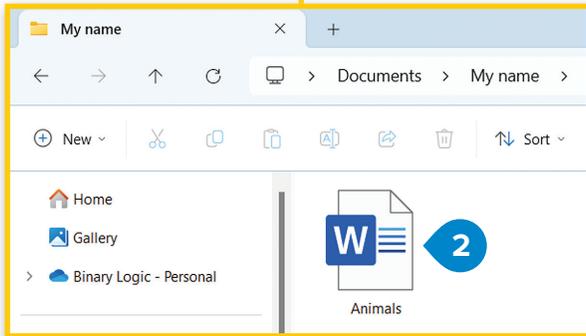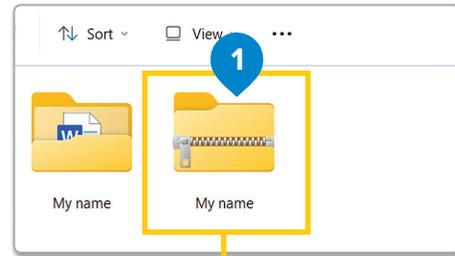
To uncompress all the files from a compressed folder:

> Right-click the folder icon and click **Extract All**. **1**

> In the **Extract** window, click **Browse**. **2**

> In the **Select a destination** window, select the desired location for your files, **3** and click **Select Folder**. **4**

> Then click **Extract**. **5**

My name

Open   Enter
Open with   >
Open in new tab
Open in new window
Share
1
Extract All...

Extract Compressed (Zipped) Folders

Select a Destination and Extract Files

Files will be extracted to this folder:

C:\Users\localadmin\Documents\My name

2

Browse...

☑ Show extracted files when complete

Select a destination

> Desktop

Organize ▾   New folder

Home
Binary Logic - Person

Desktop   **3**

Downloads

Name   Date modified   Type   Size

No items match your search.

4

Folder: Desktop

Select Folder   Cancel

Extract Compressed (Zipped) Folders

Select a Destination and Extract Files

Files will be extracted to this folder:

C:\Users\localadmin\Desktop

Browse...

☑ Show extracted files when complete

5

Extract   Cancel

My name

⏳ **History**

The ZIP file format was created by Phil Katz and his company, PKWARE, in 1989. The name "zip," which means speed, was the idea of Robert Mahoney, Phil's friend. They wanted people to know that ZIP was faster than any other compression format available at the time.

Changing icon size and file details

There are several ways to display a list of files in a folder.

To change how the files are displayed:

> Open **File Explorer** and click a folder. The list of files will load in File Explorer. **1**

> Click the **View** button. **2**

> Select the option you want to change the view to. **3**

1

2

3

Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
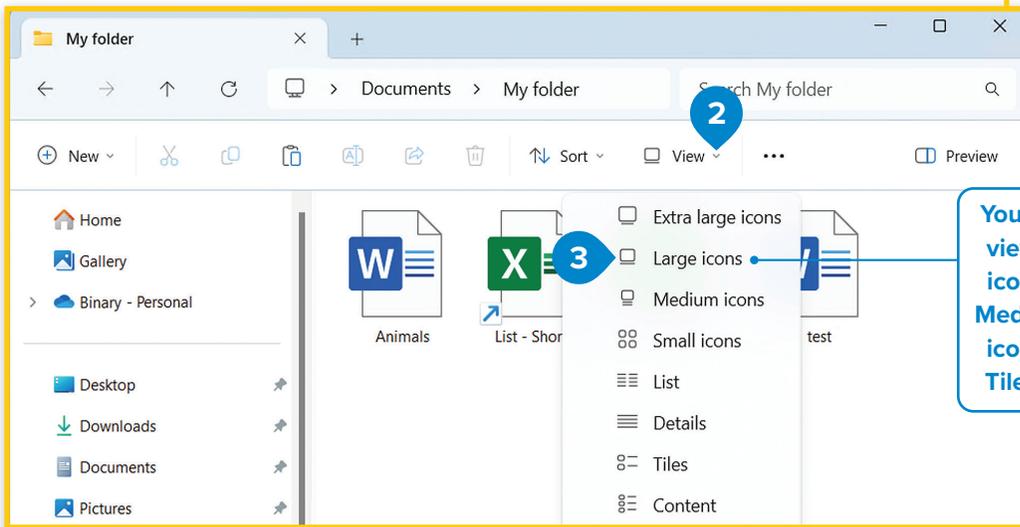
You can change the view to Extra large icons, Large icons, Medium icons, Small icons, List, Details, Tiles, and Content.

To sort and group your files:

> In an open folder, click **Sort**. **1**

> Click **More**, **2** and select the information you want. **3**

> Then, click **Group by**, **4** and choose the information you want to display. **5**

1

Sort   View

Name
Date modified
Type
2 More
Ascending
Descending
Group by

3
Size
Date created
Authors
Categories
Tags
Title

Animals

Sort   View   Pr

Name
Date modified
Type
More
Ascending
Descending
4 Group by

5
Name
Date modified
Type
Size
Date created
Authors
Categories
Tags
Title

Animals   List   test
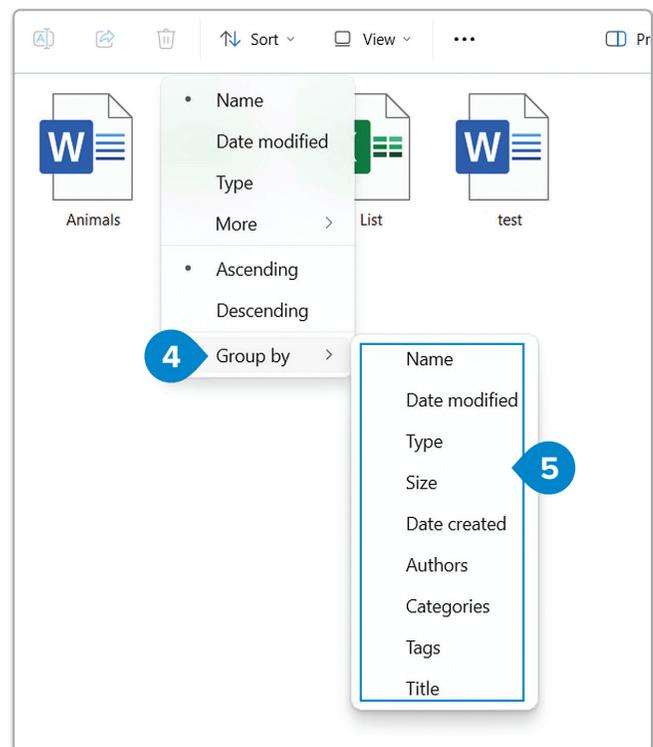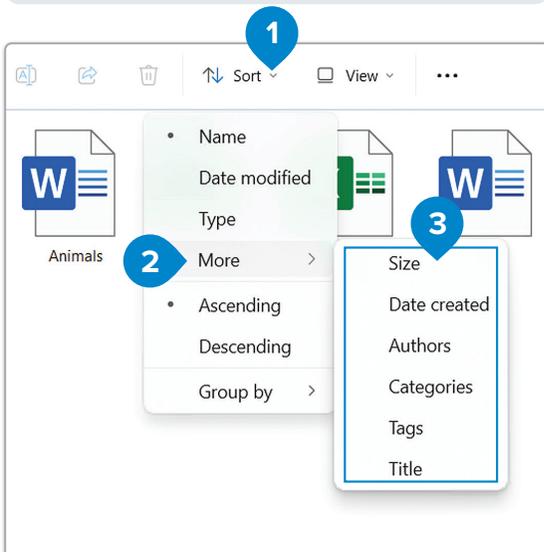
The Recycle Bin

Can you find the **Recycle Bin** on the Desktop? When you delete something from a computer, it is not deleted forever, but rather it goes into the Recycle Bin. If you delete something by accident or change your mind, you can normally find it there.

To open the Recycle Bin:

> Double-click the **Recycle Bin** icon on the Desktop and a window containing the files and folders you have deleted will open. **1**

> Right-click a file or folder to **Restore**, **Cut**, or **Delete** it. **2**
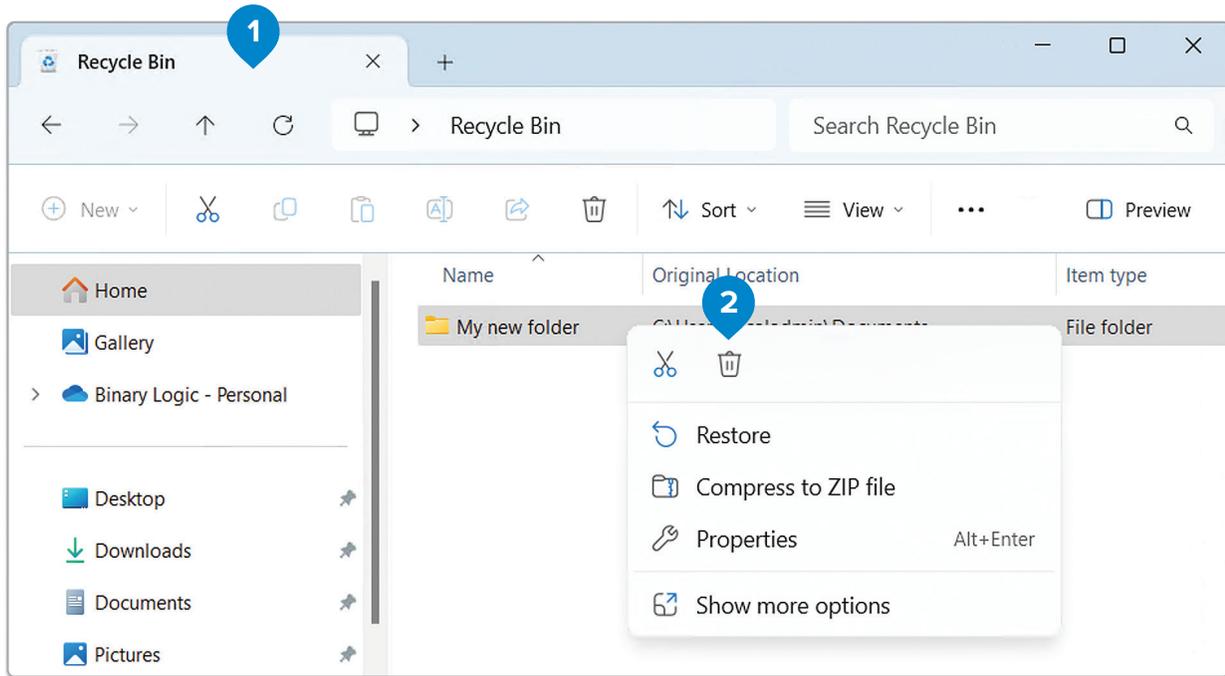
To delete all the items in the Recycle Bin:

> Right-click the **Recycle Bin** icon on the Desktop. **1**

> Click **Empty Recycle Bin**. **2**

> Click **Yes** on the confirmation message and all the files inside the **Recycle Bin** will be deleted forever. **3**
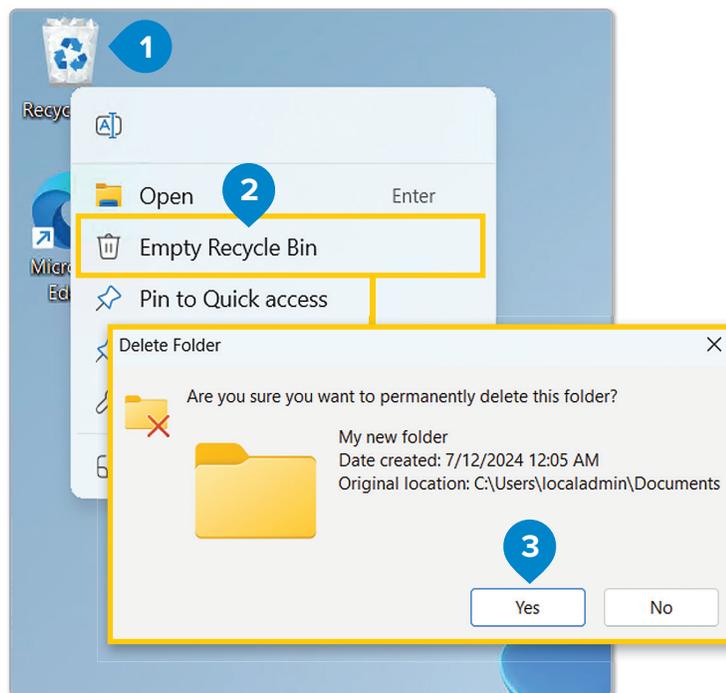
Hands on!

1. **Read the following sentences and put a check mark for True or False.**

	True	False
1. Compressing a folder increases its size.	☐	☐
2. It is impossible to recover a file once it is placed in the Recycle Bin.	☐	☐
3. A shortcut is just a copy of a file or folder that takes up the same amount of space as the original.	☐	☐
4. The only way to move files to different folders is by copying and pasting them.	☐	☐
5. One way to rename a file is to select the file and press F2 on the keyboard.	☐	☐
6. When you delete a shortcut for a program, the original program is also deleted.	☐	☐

2. **Read the questions and put a check mark for the correct answer.**

1. What is the purpose of creating folders on a computer?

   ☐ a. To reduce the size of files

   ☐ b. To keep files organized for easy access

   ☐ c. To increase the computer's speed

   ☐ d. To make files undeletable

2. Which of the following actions would delete a folder forever?

   ☐ a. Right-clicking the folder and selecting "Delete"

   ☐ b. Dragging the folder to the Recycle Bin

   ☐ c. Deleting the folder and then emptying the Recycle Bin

   ☐ d. Renaming the folder

3. What happens if you press and hold the "Ctrl" key while dragging a folder to another location?

☐ a. The folder will be moved to the new location.

☐ b. A new copy of the folder will be created at the new location.

☐ c. The folder will be deleted after it is moved.

☐ d. The folder will be locked and cannot be opened.

4. What is a folder on a computer?

☐ a. A collection of text files

☐ b. A collection of image files

☐ c. A location on the hard disk

☐ d. A specific program

5. What does compressing (zipping) a folder do?

☐ a. It deletes unnecessary files inside the folder.

☐ b. It creates a shortcut.

☐ c. It reduces the size of the folder for easier transfer or storage.

☐ d. it splits the folder into many smaller folders.

3. **Imagine all your important school files are saved on the Desktop. How could you organize these files to help you work better and find things more easily?**

4. **Create a folder structure on the computer like the one in the example.**
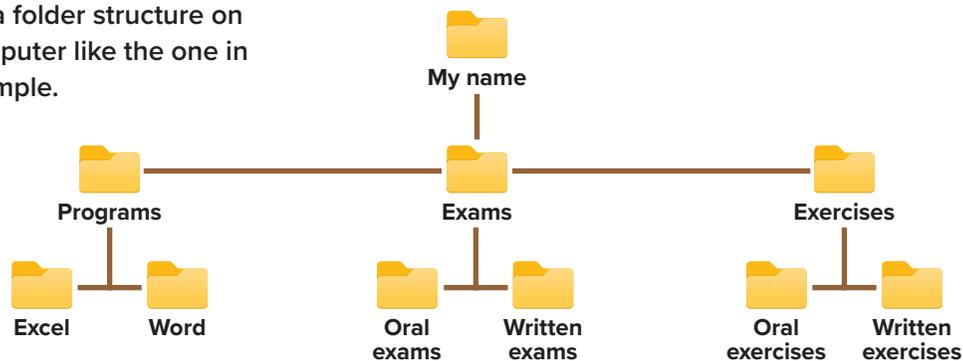
- What kind of files should you store in the "Exercises" folder? Explain your answer.

- What kind of files should you store in the "Programs" folder? Explain your answer.

- Can you find the contents of a document in the "Exams" folder without opening it? Explain your answer.

1. Learning the basics

Basic settings

> **?** Have you ever changed the look or feel of your computer? What are some things you would like to change?

The operating system is the main working environment on your computer. For this reason, it is important for it to be as user-friendly as possible. Most operating systems give you lots of different tools for changing their environment and settings.

Mouse settings

The first settings that you are going to learn how to change are those of your mouse. **Microsoft Windows** offers you a way to customize the buttons of your mouse or the movement of your cursor, which is very useful, especially if you are left-handed.

To change the mouse settings:

> Click the **Search** box and type "**settings**". **1**
> Click the **Settings** application. **2**
> In the **Settings** window, click **Bluetooth & devices**, **3** and then click **Mouse**. **4**
> You can now change basic mouse settings such as choosing which mouse button will be the primary, **5** or changing how scrolling works. **6**
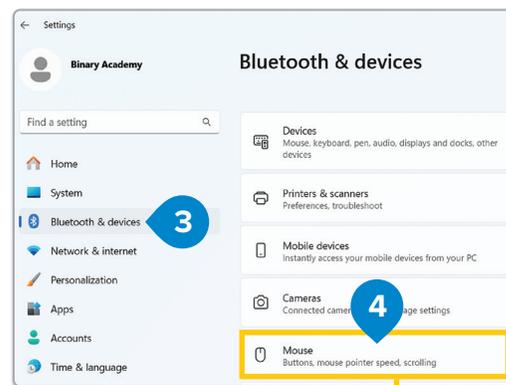
The **Primary mouse button** option is used to adjust the mouse for right-handed or left-handed use. Until now, we have used the left button to open files and folders or select files and the right button for the pop-up menus. Click this option and the use of the buttons will be reversed.
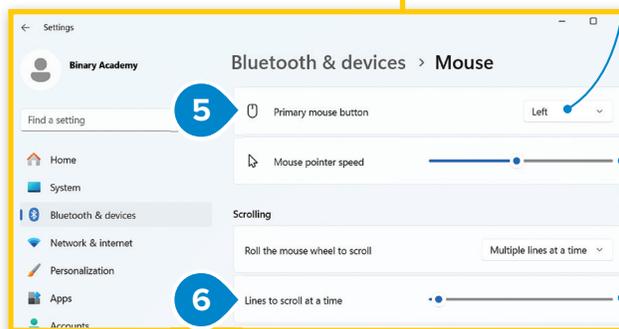
You can choose to scroll an entire page or a number of lines with each notch of the wheel of your mouse and using the slider you can adjust the mouse wheel scrolling speed.

For Review Purposes Only

Programs and features

The **Settings** window also allows you to remove a program that you have installed on your computer and that is no longer needed. But, be extra careful. Once you delete a program in this way, it is permanently deleted from your computer. If you want to use this program again, you will have to reinstall it.

To remove a program:

> In the **Settings** window, click **Apps**, ❶ and then click **Installed apps**. ❷

> In the **Installed apps** pane, select the program you want to remove, ❸ and then click the **More** button. ❹

> Click **Uninstall**. ❺

> Follow the instructions until the program is completely uninstalled.

Ask your teacher before you click anything that can remove a useful program.

Settings — □ ✕

Binary Academy

Apps

Find a setting

Home
System
Bluetooth & devices
Network & internet
Personalization
Apps ❶

Installed apps
Uninstall and manage apps on your PC ❷

Advanced app settings
Choose where to get apps, archive apps, uninstall updates

Default apps
Defaults for file and link types, other defaults

If you want to know the status of your network or make changes to it, you click Network & internet.

Offline maps
Downloads, storage location, map updates

Apps for websites

Settings — □ ✕

Binary Academy

Apps › **Installed apps**

Find a setting

Home
System
Bluetooth & devices
Network & internet
Personalization

Media Player ❸
Microsoft Corporation | 7/8/2024   16.0 KB ⋯ ❹

Microsoft 365 (Office)
Microsoft Corporation | 7/8/2024

Advanced options
Move
Uninstall ❺

Microsoft 365 Apps for business - en-us
16.0.17726.20126 | Microsoft Corporation | 7/8/2024   ⋯

Microsoft Clipchamp
Microsoft Corp. | 7/9/2024   48.0 KB ⋯

💡 Smart Tip

If you want to remove a program, just deleting its files is not enough. When you install a program, its files are copied to different places on the hard drive. To make sure everything is completely removed, you need to uninstall the program through the Installed Apps panel.

For Review Purposes Only

Date and time

Click the date and time on the right side of the Taskbar, and a clock and calendar displaying the current month will appear on your screen.

To change the date and time of your computer:

> Right-click the time in the **Taskbar** ❶ and then click **Adjust date and time**. ❷
> Turn off the **Set time automatically** option. ❸
> Click **Change**. ❹
> Change the date and time using the arrows. ❺
> Click **Change**. ❻

⚙ Adjust date and time ❷
⚙ Notifications settings

ENG ⌨ 🔊 12:16 PM 7/10/2024 🔔 PRE ❶

Settings — ☐ ✕

Binary Logic Academy

Find a setting 🔍

🏠 Home
🖥 System
📶 Bluetooth & devices
📡 Network & internet
✏ Personalization
📦 Apps
👤 Accounts
🌐 Time & language
🎮 Gaming
🧍 Accessibility

Time & language › **Date & time**

2:26 AM
Wednesday, July 10, 2024

🌐 Time zone
(UTC-08:00) Pacific Time (US & Canada)

🌐 Region
United States

Set time zone automatically   Off ⌄

Time zone   (UTC-08:00) Pacific Time (US & Canada) ⌄

Adjust for daylight saving time automatically   On

❸

Set time automatically   Off ⌄

Set the date and time manually   Change ❹

Show time and date in the System tray   On

You can change the time zone to wherever you are. To do that, click **Time zone** and choose the country you want.

If **Adjust for daylight saving time automatically** is checked, then you will always have the correct time.

Change date and time

Change date and time

Date

| July ⌄ | 10 ⌄ | 2026 ⌄ | ❺ |

Time

| 2 ⌄ | 30 ⌄ | AM ⌄ |

❻

Change   Cancel
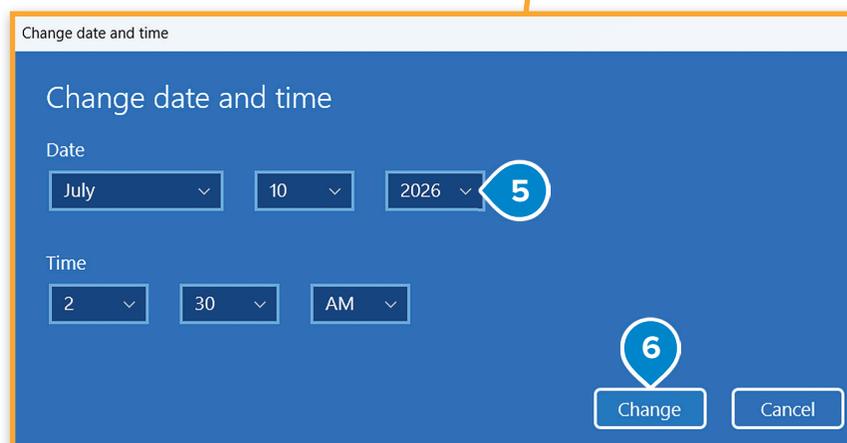
⏳ **History**

In the spring, we change the time to use more natural light and less energy during the evenings. This is called daylight saving time. At the end of fall, we change the time back again. Some people say that Benjamin Franklin was the first person to have this idea in 1784.

For Review Purposes Only

Screen settings

Computers use pixels, which are tiny dots of color, to create the text and pictures that are displayed on the screen. The screen resolution is the number of pixels on your screen.

> **To change the screen resolution:**
>
> > Right-click an empty space on your Desktop and a pop-up menu will open. **1**
> > Click **Display settings**. **2**
> > In the **System** window, in the **Display** pane, click the drop-down list below **Display resolution** and choose the screen resolution you want. **3**
> > A new window will open. Click **Keep changes** to use the new resolution, **4** or click **Revert** if you don't like it. **5**

1

2

```
View                        >
Sort by                     >
Refresh
New                         >
Display settings
Personalize
Show more options
```

System > **Display**

Brightness & color

Brightness
Adjust the brightness of the built-in display

Night light
Use warmer colors to help block blue light   Off

HDR
More about HDR

Scale & layout

Scale   125% (Recommended)
...d other items

3

1920 × 1080 (Recommended)

connected display

A higher resolution doesn't always mean better graphics. Each monitor works best with a specific screen resolution.

Keep these display settings?

Reverting to previous display settings in 11 seconds.

4 Keep changes   **5** Revert
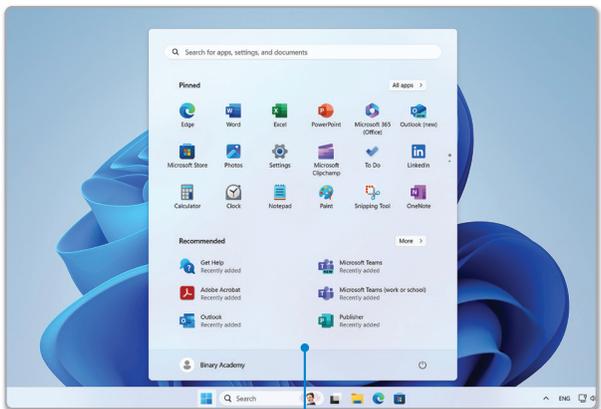
The more pixels you have, the better the image quality. If you use a lower screen resolution, items on the screen will be larger.
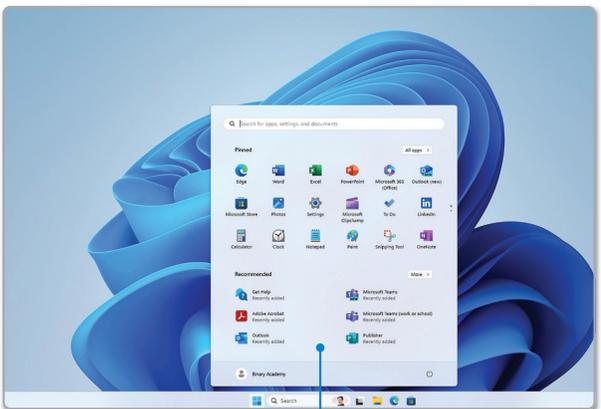
A higher screen resolution makes text and pictures sharper, but it also makes them smaller on the screen.

Personalization

All computers have a desktop, and usually each one is different. You can have your own personal desktop with a different picture or Windows colors.

To personalize the Desktop background:

> Right-click an empty space on the Desktop and a pop-up menu will open on your screen. **1**
> Click **Personalize**. **2**
> Click the image you like. **3**
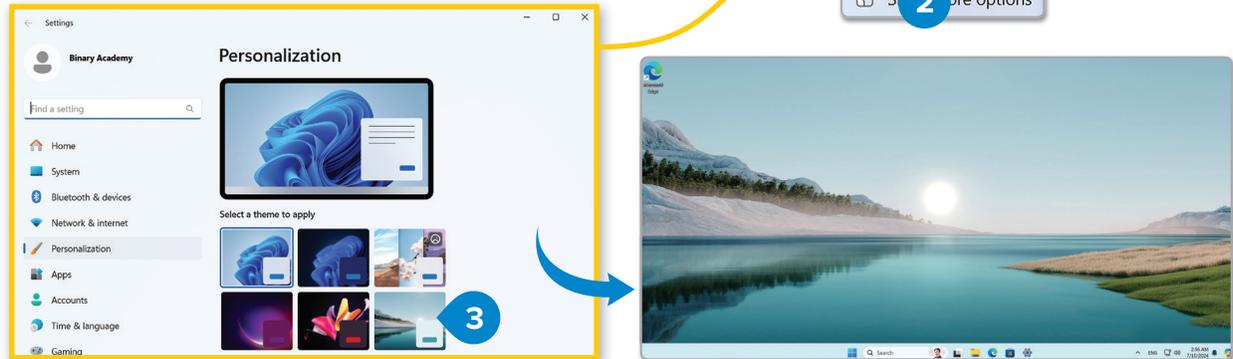
System sounds

Find the speaker icon on the right side of the Taskbar and click it once. You can drag the slider left or right to adjust the volume.

To adjust the volume of all active programs:

> Right-click the small speaker icon and a menu window will open. **1**
> Click **Sound settings**. **2**
> In the **Sound** window, click **Volume mixer**. **3**
> Here, you can adjust **System sounds**. **4**

You can adjust the volume for specific programs as well as for the entire device by dragging the sliders.
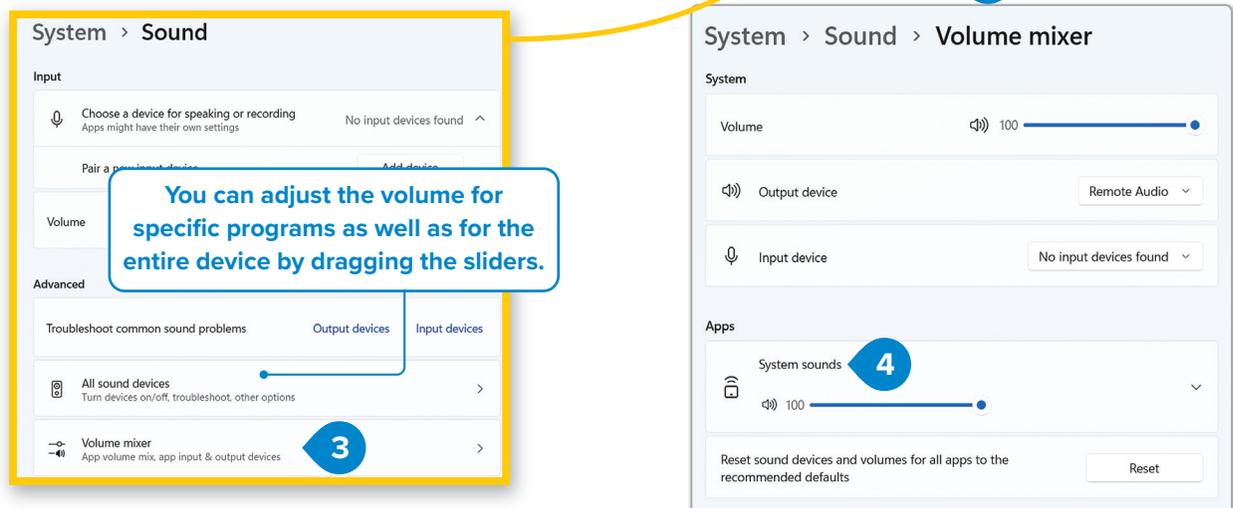
1. Read the following sentences and put a check mark for True or False.

	True	False
1. Changing the mouse settings to left-handed mode will reverse the functions of the mouse buttons, making the right button function as the primary one.	☐	☐
2. Removing a program by deleting its files directly from the hard drive ensures that the program is completely uninstalled from the system.	☐	☐
3. The screen resolution setting determines the number of pixels displayed on the screen, affecting the sharpness of images and text.	☐	☐
4. You can adjust both the date and time of a computer manually even when the automatic setting for time matching is enabled.	☐	☐
5. Personalizing the Desktop background and system sounds improves the performance of the computer.	☐	☐

2. Read the questions and put a check mark for the correct answer.

1. What happens when you change the primary mouse button in the settings?

☐ a. The left button becomes inactive.

☐ b. The functions of the right and left mouse buttons are switched.

☐ c. Both buttons will perform the same actions.

☐ d. The mouse stops working.

2. What is the correct process for uninstalling a program from a computer?

☐ a. Delete all the program's shortcuts from the Desktop.

☐ b. Open the "Installed apps" in the Settings, select the program, and click "Uninstall."

☐ c. Manually delete the program's files from the system folder.

☐ d. Use another program to help you uninstall it.

3. If you want to change the screen resolution of the display, which settings should you modify?

☐ a. "Personalization" settings

☐ b. "Mouse" settings

☐ c. "Display" settings

☐ d. "Date and time" settings

4. Which of the following actions will allow you to change the date and time of a computer?

☐ a. Right-clicking the desktop and selecting "Settings"

☐ b. Going to the Taskbar, right-clicking the time, and selecting "Adjust date and time"

☐ c. Restarting the computer

☐ d. Accessing "Mouse settings" in the "Control Panel"

5. How can you adjust the volume of specific programs on a computer?

☐ a. By going to the "Personalization" menu and selecting "Volume settings"

☐ b. Using the "Volume mixer" found by right-clicking the speaker icon on the Taskbar

☐ c. Dragging the volume icon from the desktop into the program window

☐ d. Adjusting the system sounds in the "Display settings"

3. **Imagine you frequently use a computer for playing videos, editing photos, and working with documents. Why might it be important to adjust the screen resolution and personalize the mouse settings for different tasks? How can these changes improve your experience and efficiency?**

4. **Personalize the Desktop background in any way you like. Explore different backgrounds and notice how each one changes the overall feel of the Desktop. Try selecting backgrounds with different colors or styles, and pay attention to how each one affects your mood and workspace.**
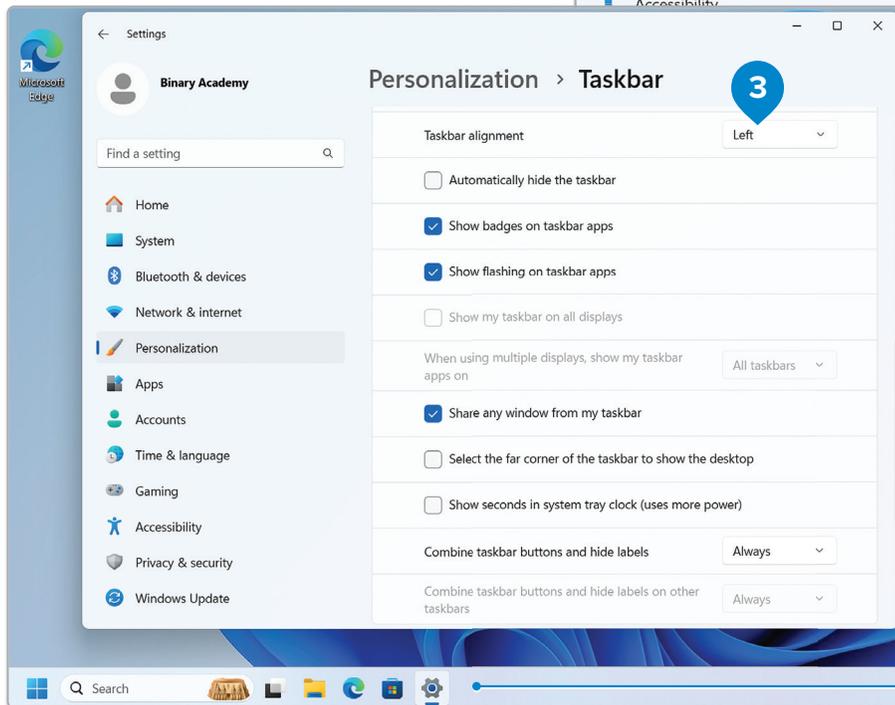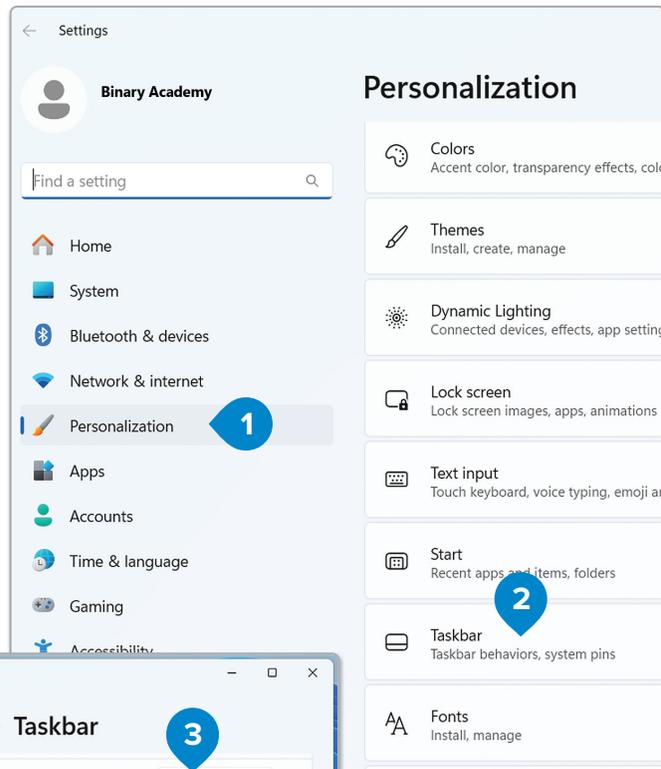
Hints and tips

> **?** Where can you go to find help if something is wrong with your computer?

Customizing your Desktop

You have already learned how to customize the interface of your operating system. Now, let's explore some more techniques, such as moving the taskbar and changing the size of icons.

To move your taskbar:

> In the **Settings** window, click **Personalization**, **1** and then click **Taskbar**. **2**

> In the **Taskbar** pane, in the **Taskbar alignment** option, select **Left**. **3**

Settings

Binary Academy

Find a setting

🏠 Home

🖥 System

✳ Bluetooth & devices

🌐 Network & internet

🖌 Personalization **1**

📱 Apps

👤 Accounts

🕐 Time & language

🎮 Gaming

👤 Accessibility

Personalization

	Colors Accent color, transparency effects, col...
	Themes Install, create, manage
	Dynamic Lighting Connected devices, effects, app setting...
	Lock screen Lock screen images, apps, animations...
	Text input Touch keyboard, voice typing, emoji a...
	Start Recent apps and items, folders
	Taskbar **2** Taskbar behaviors, system pins
	Fonts Install, manage

Settings

Binary Academy

Find a setting

🏠 Home
🖥 System
✳ Bluetooth & devices
🌐 Network & internet
🖌 Personalization
📱 Apps
👤 Accounts
🕐 Time & language
🎮 Gaming
👤 Accessibility
🛡 Privacy & security
🔄 Windows Update

Personalization > Taskbar

Taskbar alignment **3** — Left ▾

☐ Automatically hide the taskbar

☑ Show badges on taskbar apps

☑ Show flashing on taskbar apps

☐ Show my taskbar on all displays

When using multiple displays, show my taskbar apps on — All taskbars ▾

☑ Share any window from my taskbar

☐ Select the far corner of the taskbar to show the desktop

☐ Show seconds in system tray clock (uses more power)

Combine taskbar buttons and hide labels — Always ▾

Combine taskbar buttons and hide labels on other taskbars — Always ▾

> **The Taskbar is on the left side of the screen.**

1. Learning the basics

To change the size of the icons:

> Right-click an empty space on your Desktop.
> Click **View**, ❶ and then click **Large icons**, **Medium icons**, or **Small icons**. ❷
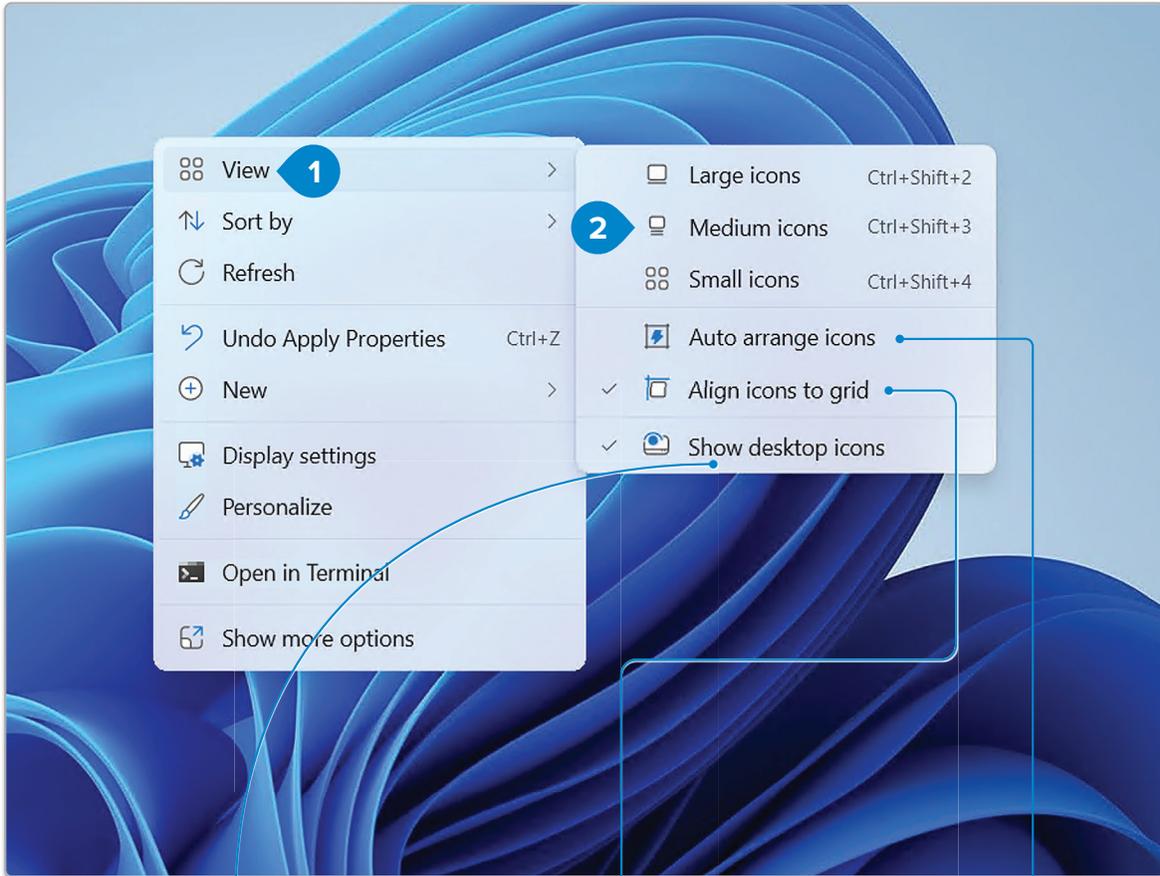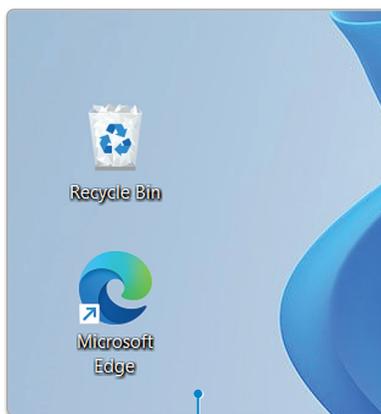

Show desktop icons makes the desktop icons appear or become hidden.

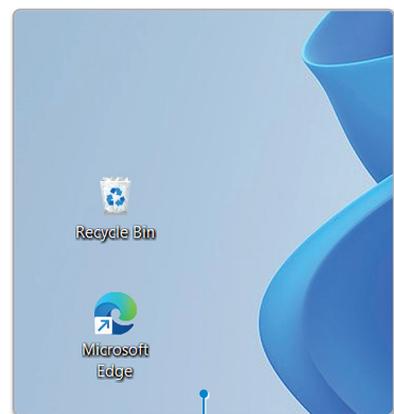**Align icons to grid** always aligns the icons to an invisible grid on the screen.

Auto arrange icons puts all the icons next to or below each other.

Large

Medium

Small

Multitasking
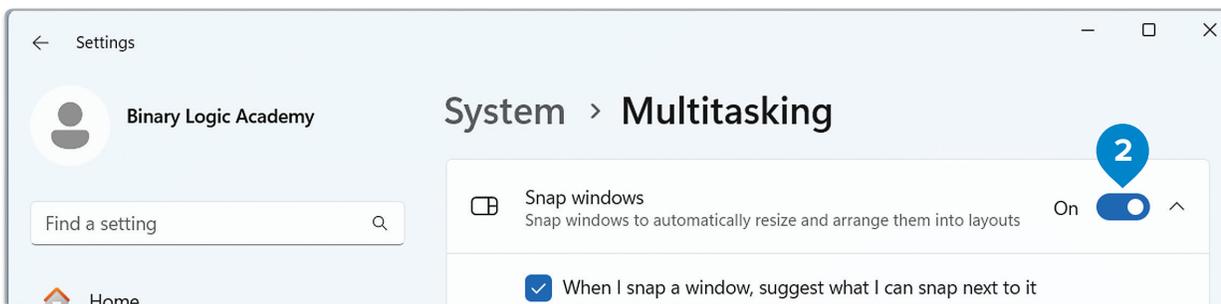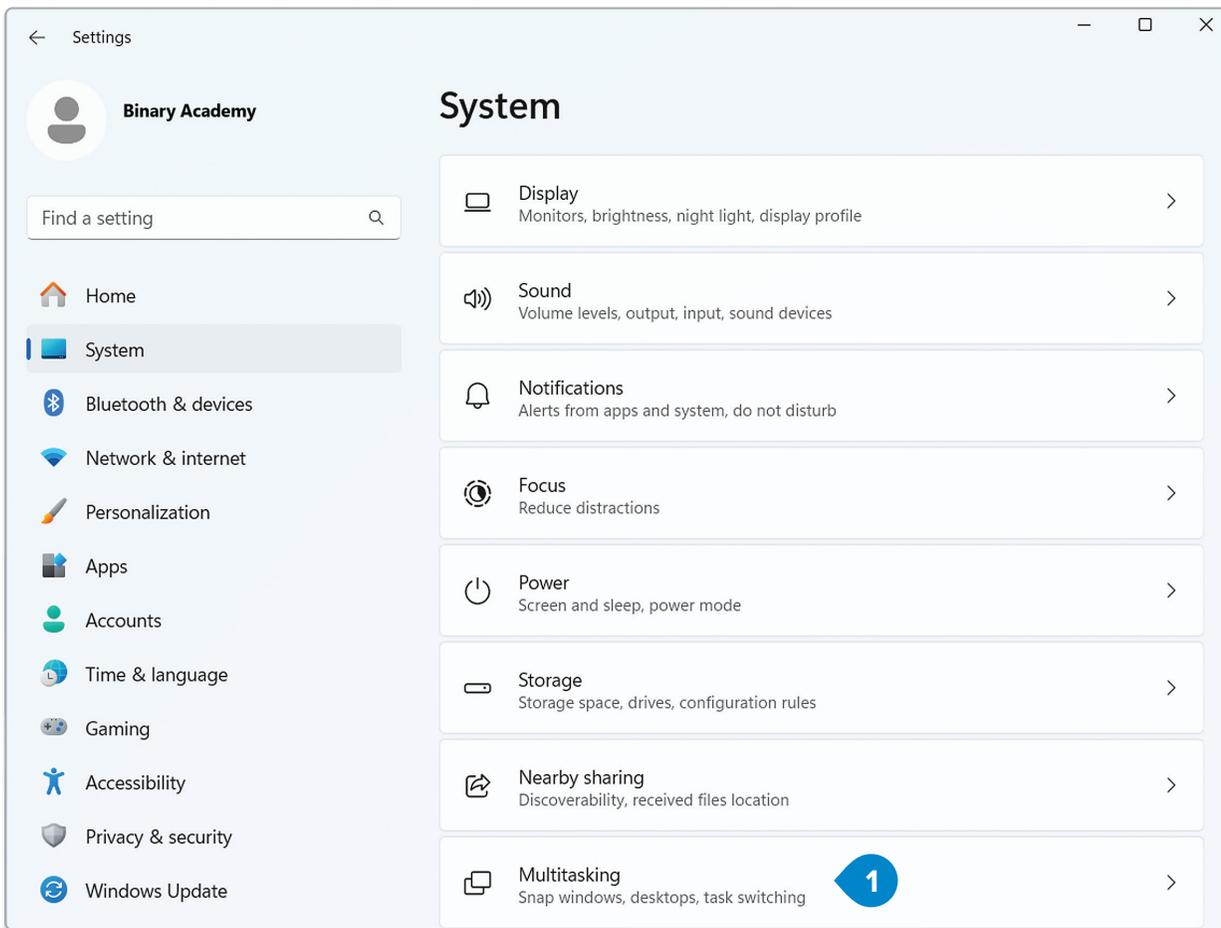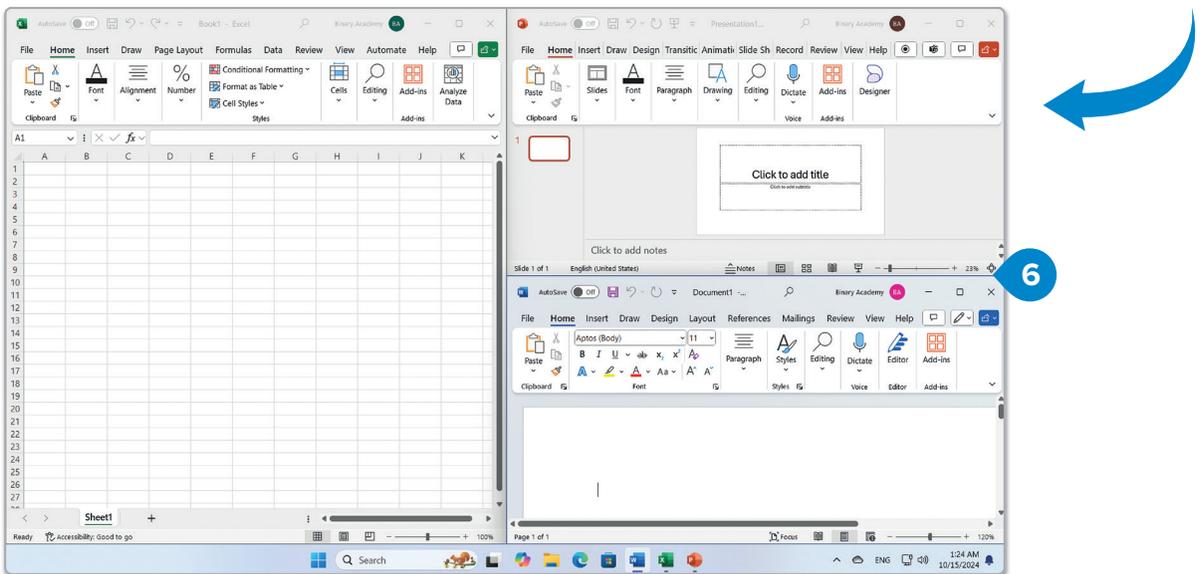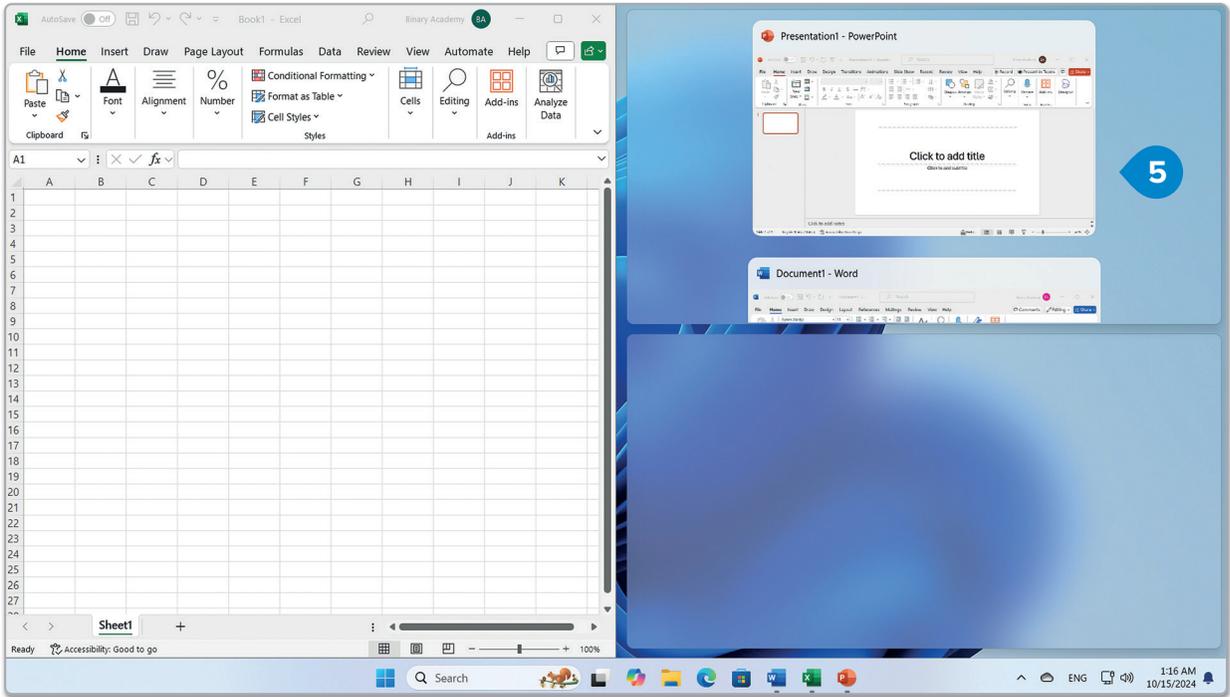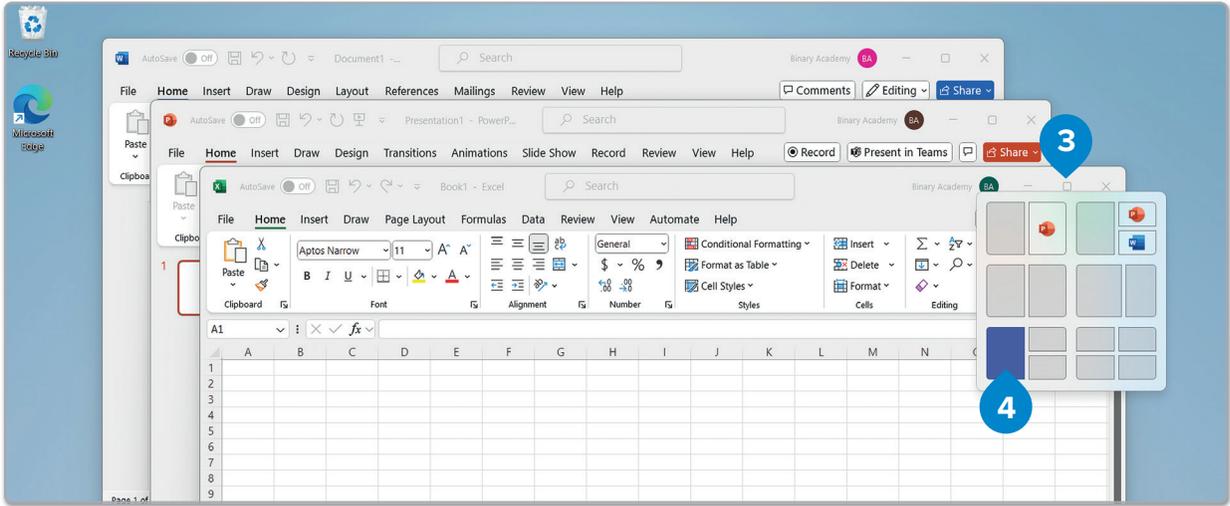
Microsoft Windows allows you to work with many programs at the same time and have many files and folders open. You can arrange the windows in a way that makes working easier for you.

To arrange your windows:

> In **Settings**, click **System**, then choose **Multitasking**. ❶

> From the **Multitasking** pane, turn on **Snap windows**. ❷

> Put the cursor over a window's Maximize button ❸ to choose the layout you want. ❹

> In each box on the screen, click the thumbnail of window that you want to place in that position. ❺

> Click a thumbnail in each of the areas of the screen.

> The windows have been arranged accordingly. ❻

Settings — □ ✕

Binary Academy

Find a setting 🔍

🏠 Home
🖥 System
🔷 Bluetooth & devices
📶 Network & internet
🖌 Personalization
🔲 Apps
👤 Accounts
🕐 Time & language
🎮 Gaming
🧍 Accessibility
🛡 Privacy & security
🔄 Windows Update

System

🖥 **Display**
Monitors, brightness, night light, display profile >

🔊 **Sound**
Volume levels, output, input, sound devices >

🔔 **Notifications**
Alerts from apps and system, do not disturb >

◎ **Focus**
Reduce distractions >

⏻ **Power**
Screen and sleep, power mode >

▭ **Storage**
Storage space, drives, configuration rules >

↗ **Nearby sharing**
Discoverability, received files location >

🗔 **Multitasking**
Snap windows, desktops, task switching ❶ >

Settings — □ ✕

Binary Logic Academy

Find a setting 🔍

🏠 Home

System > Multitasking

❷

▭ **Snap windows**
Snap windows to automatically resize and arrange them into layouts   On ⬤ ^

☑ When I snap a window, suggest what I can snap next to it

Task Manager

The **Task Manager** allows you to manage all running programs and is especially helpful when a program stops responding.

To close a program that is not responding:

> Right-click an empty space on your **Taskbar**. **1**
> Click **Task Manager**. **2**
> Click the program that is not responding, **3** and click **End task**. **4**

Be careful. Close only the program that is not responding. Don't close anything else because you might lose unsaved work.
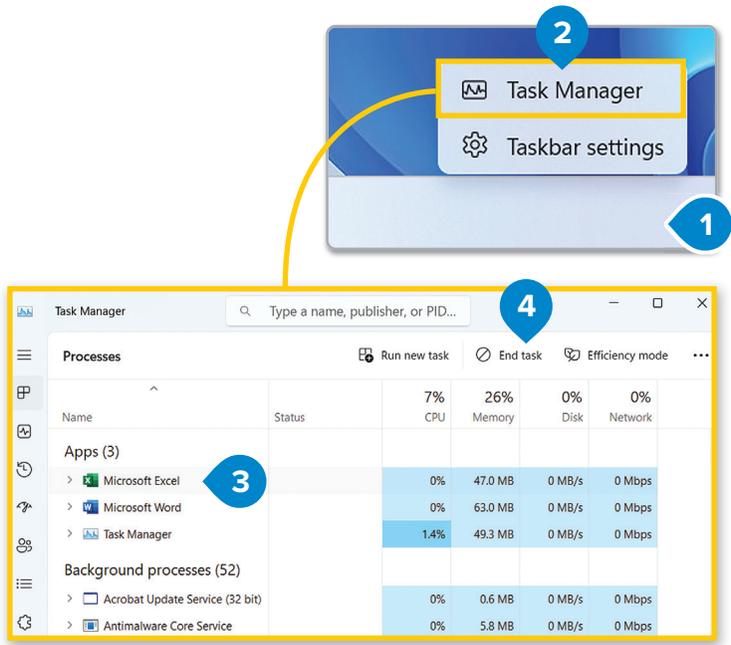
Removing a storage device

As previously mentioned, all storage devices appear in the "This PC" window. When connecting a memory stick or external hard drive for the first time, you may need to wait briefly while your computer recognizes the new device. Most storage devices connect via a USB port. Once recognized, the device will appear in the "This PC" window.

Before removing a storage device, ensure the computer has finished writing data to it. To avoid potential data loss, always safely eject the device virtually before unplugging it from the USB port.

To remove a storage device:

> In the **File Explorer** window open **This PC**. **1**
> Right-click your storage device, **2** and click **Eject**. **3**
> Wait for the confirmation message on the screen, **4** and remove the device from the computer.
> The device will be removed from the **This PC** window.
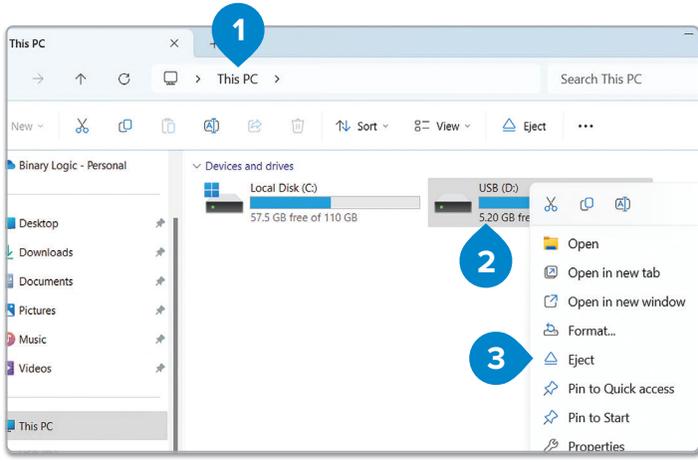
Troubleshooting

Finding and fixing problems with your computer is an important skill. When using Windows, you might have issues such as a frozen screen, programs not opening, or the computer running slowly. Sometimes, problems can be caused by other devices connected to your computer. To solve these issues, follow these troubleshooting steps:

- Restart the computer.
- Check the Internet connection.
- Use Task Manager to close programs that are not responding.
- Check if everything is plugged in and working.
- Use the "Get Help" app to find solutions.

Using a troubleshooting diagram

You can use a troubleshooting diagram to guide you step by step when finding the source of a problem. Start at the top and follow each branch based on what you observe or check. A guide like this helps users understand how to check different elements of a computer issue, like the power supply or the Internet connection, and restarting, before asking for help.

Here is an example of a troubleshooting diagram:

For Review Purposes Only
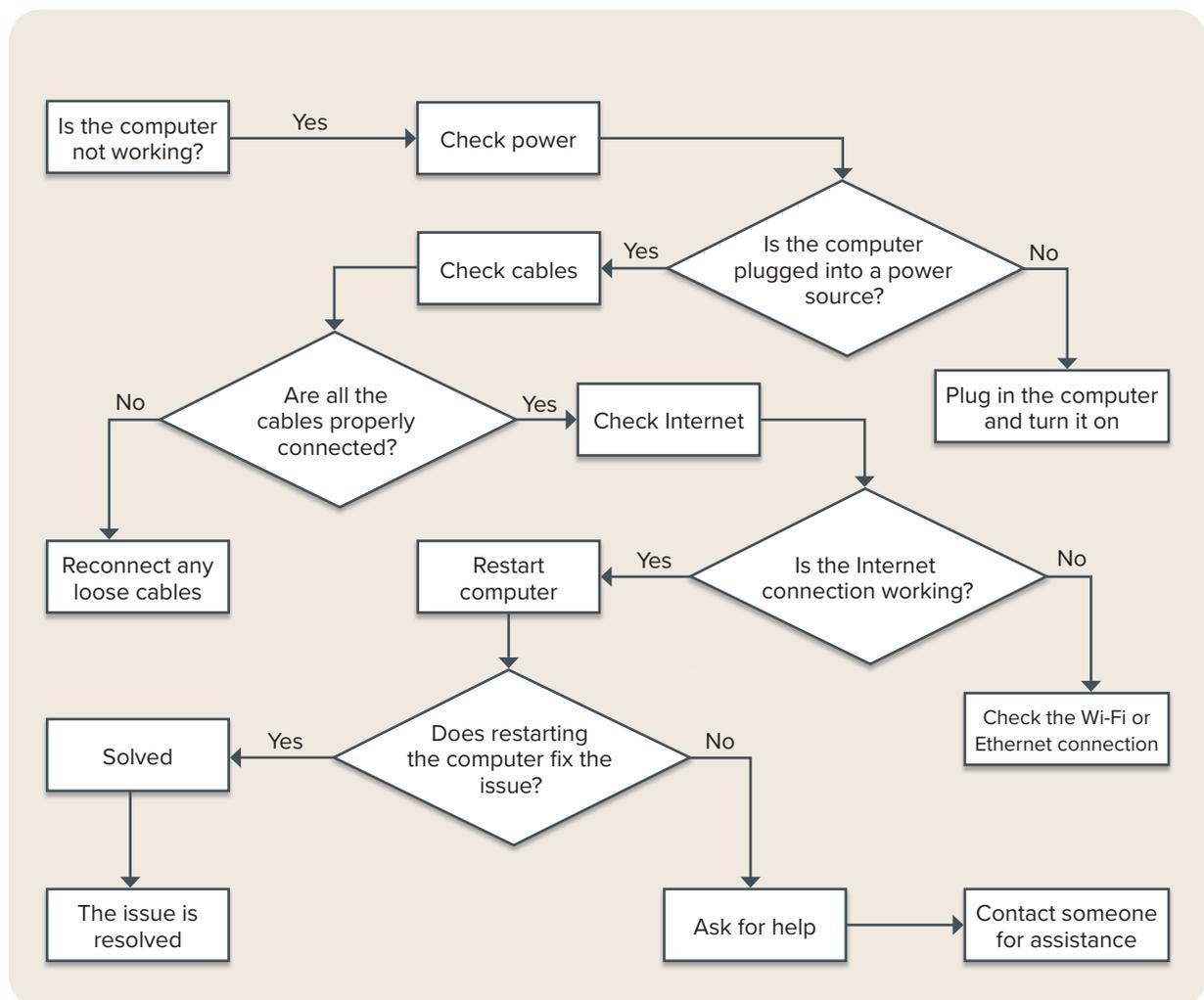
To use the Get Help program to find a solution to a problem:

> Click the **Start** button, ❶ click the **All apps** button and scroll down the sidebar.

> Click the **Get Help** application. ❷ The **Get Help** window will open. ❸

> In the **Search box** type a short description of the problem, e.g.,
  "**Internet connection problem**" ❹ and then choose the appropriate result. ❺

> The solution to your problem will pop up. ❻
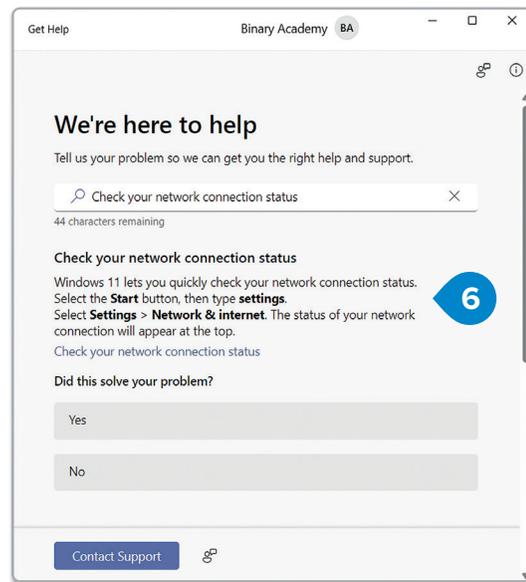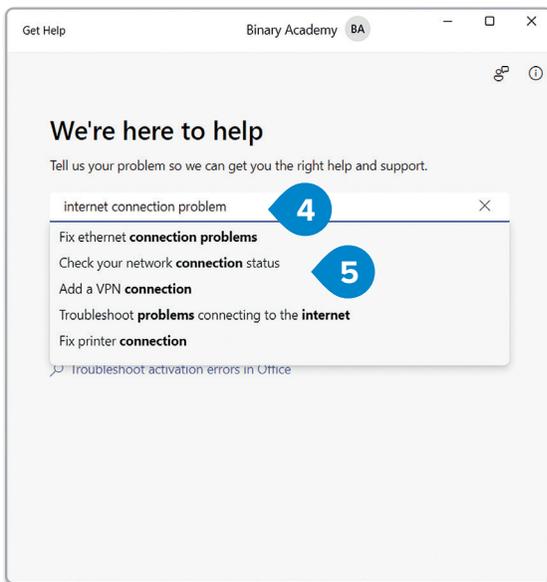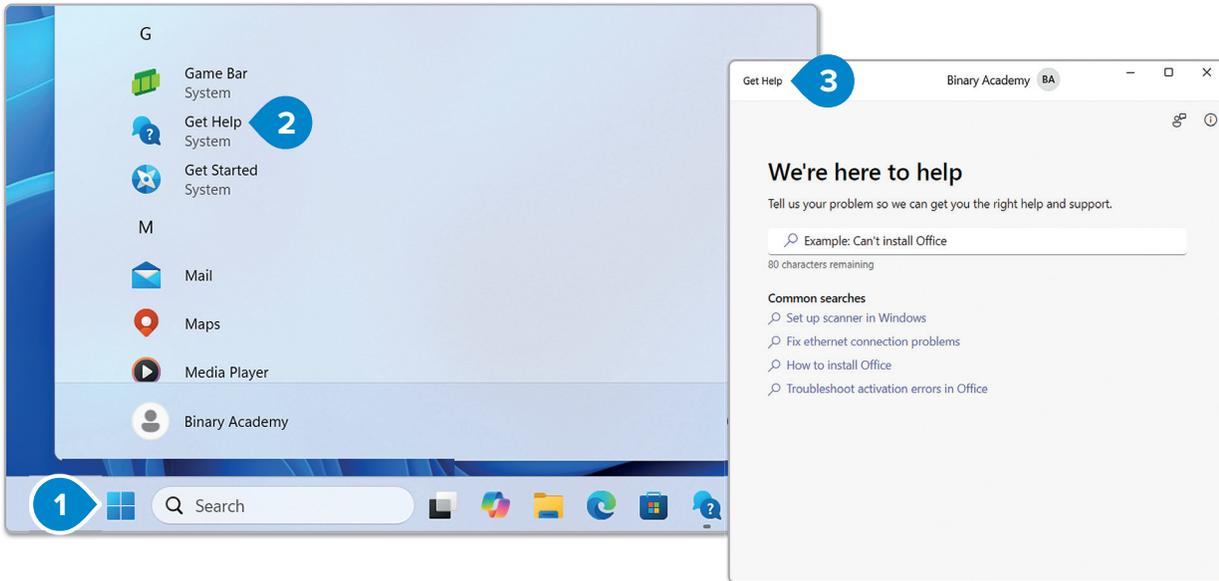
Smart Tip

When using the Help feature in programs, it's better to type specific keywords instead of full phrases. For example, type "Create a new folder" or "Create folder" rather than "I want to know how to create a new folder." This strategy will help you find the information you need more quickly and accurately.

File properties

When it comes to files and folders, there's more to explore beyond just creating them. Every file or folder contains important information, such as the date it was created and where it is stored on the hard drive. By learning about these advanced features, you can better understand how your files and folders work.

To access file properties:

> Locate the file on your hard drive, e.g., in **Documents**. ①

> Right-click it, ② and click **Properties**. ③

> The **Properties** window will open. ④

> Check the information you want and apply any changes and click **OK**. ⑤
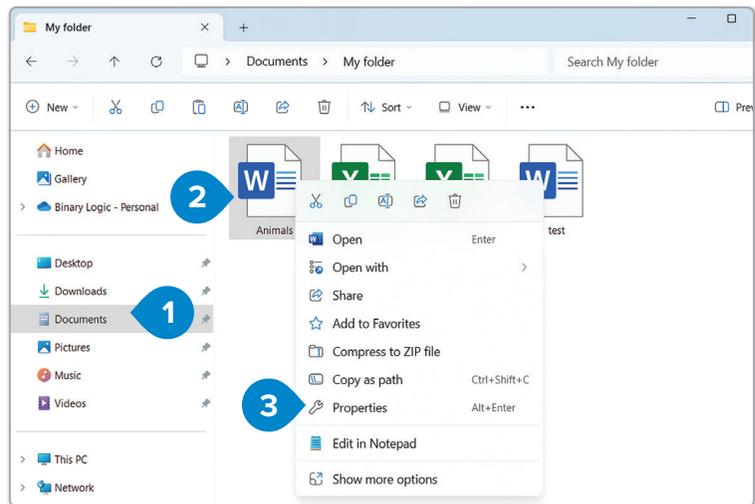
Type of file specifies if the file is, for example, a Word document (.docx) or Excel file (.xlsx).

Opens with determines which program will be used to open the file.

Location specifies where the file is located on the disk.

Size indicates how big the file is.

Size on disk specifies how much space the computer needs to save this file.

Read-only locks the file so that no changes are allowed.

Created indicates the date on which the file was created.

Modified specifies the date on which you last opened and changed this file.

Accessed indicates the date on which you last opened the file.

Hidden makes the file invisible.

When you click **Apply**, all the changes that you have chosen are activated, but the window remains open.

Be Safe
During a thunderstorm, it is safer not to use your computer. Thunderstorms can cause power surges, which might damage electronic devices like computers. To protect a computer, unplug it from the power outlet until the storm ends.

Hidden folders and files

When you want to hide a folder or file on your computer, you can make it invisible to other people who use the computer. This makes the files more secure because they cannot be accidentally deleted. Making a file hidden does not mean that it is deleted or permanently hidden from the computer. You can unhide it any time you want.

To display all the hidden files and folders on the screen:

> Open the **Documents** window and click **View**. ①
> From the drop-down list, point to **Show** and then click **Hidden items**. ②
> All the hidden files and folders will be displayed. ③
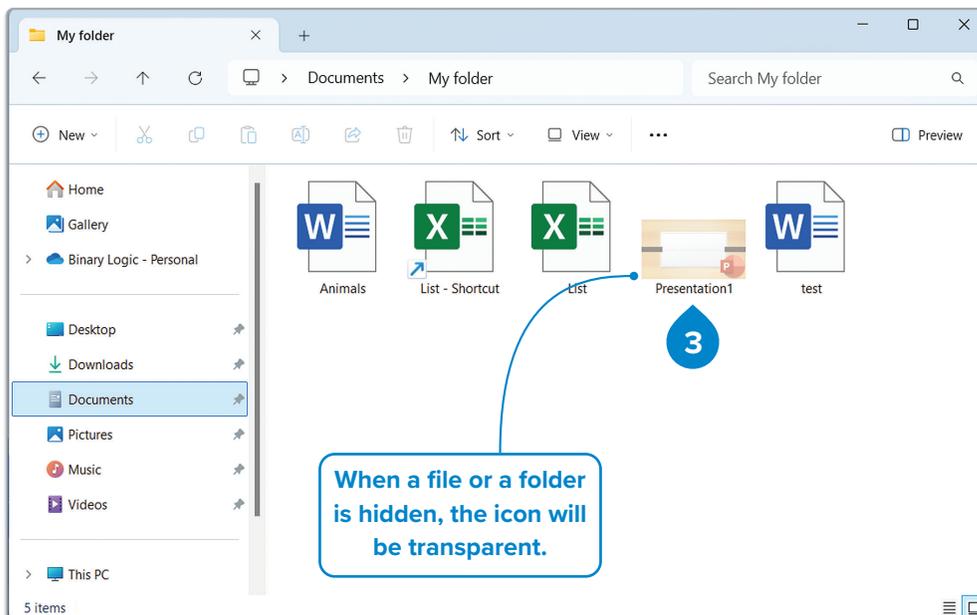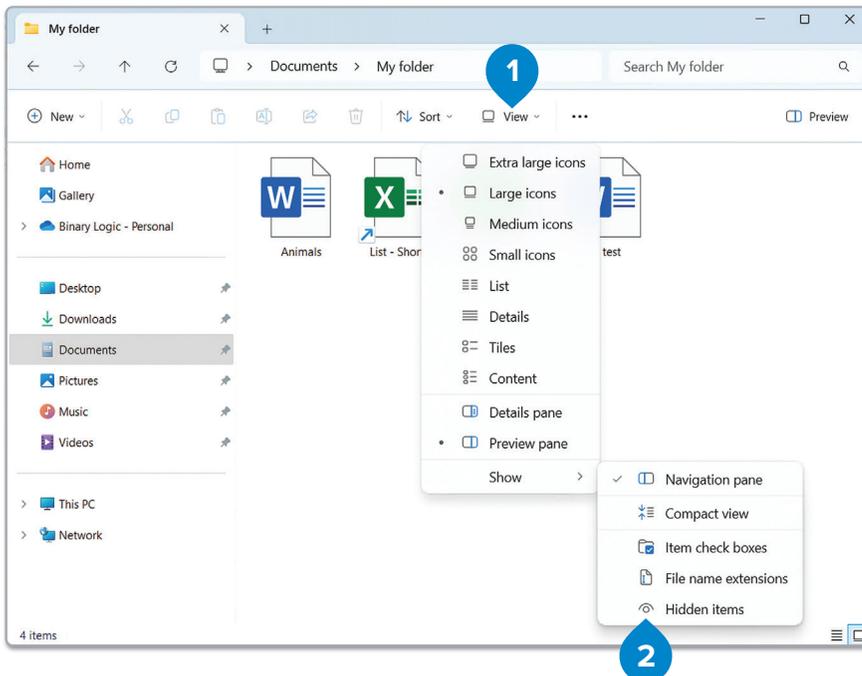
When a file or a folder is hidden, the icon will be transparent.

Hands on!

1. **Read the following sentences and put a check mark for True or False.**

	True	False
1. Moving the Taskbar to the left side of the screen improves computer performance by reducing system memory usage.	☐	☐
2. You can change the size of icons on the Desktop, but this will also resize the windows of all open applications.	☐	☐
3. Using the "Snap windows" feature allows you to arrange multiple windows on the screen for more efficient multitasking.	☐	☐
4. Ejecting a storage device can only be done safely after the file transfer is complete.	☐	☐
5. Windows has a specific application that helps users search for solutions to computer problems.	☐	☐

2. **Read the questions and put a check mark for the correct answer.**

1. What happens when you align icons on the Desktop?

   ☐ a. Icons are automatically arranged into columns and rows.

   ☐ b. Icons do not exist on the Desktop.

   ☐ c. Icons cannot be moved from their current positions.

   ☐ d. Icons increase in size.

2. How do you use the "Snap windows" feature to arrange windows on the screen?

   ☐ a. Click the "Start" menu and select "Snap windows."

   ☐ b. Use the "Task Manager" to minimize all windows and reopen them in a grid.

   ☐ c. Put the cursor over the "Maximize" button and choose a layout to snap windows.

   ☐ d. Open each program and manually adjust its size to fit on the screen.

3. What should you do before physically disconnecting a USB drive or external hard drive?

☐   a. Close all the files saved on the drive.

☐   b. Right-click on the drive and select "Properties."

☐   c. Eject the drive using "File Explorer" to ensure safe removal.

☐   d. Shut down the computer.

4. How do you access "Task Manager" to close a program that is not responding?

☐   a. Right-click on the Taskbar and select "Task Manager."

☐   b. Go to "Settings" and select "End Task."

☐   c. Click on the program and press "Esc."

☐   d. Use the "Multitasking" pane in System.

5. Which of the following options is available in "File Properties"?

☐   a. Compressing a file to save space

☐   b. Changing the date the file was last modified

☐   c. Viewing the location of the file on the hard disk

☐   d. Renaming the file in its folder

3. **Imagine a computer is running slowly. Use the troubleshooting steps to answer these questions:**

- What might be causing the computer to run slowly?
- Which step would you try first? Why?
- If restarting doesn't work, what else could you try?
- What would you do if an application stops responding while the computer is running slowly?

4. **Customize a Desktop.**

- Move the Taskbar to the left side of the screen.
- Change the size of the icons and arrange them in an invisible grid.
- Open at least three programs or files on the computer and arrange the windows however you like.
- Show the Desktop to your classmates.

Project

Research different operating systems

Research various operating systems, exploring their advantages and disadvantages. Collaborate with classmates to create and present a visual summary of your research.

1. **Form teams.**

Within your group, assign roles to make sure everyone contributes. Possible roles include a researcher to gather information, a writer to organize the findings, a designer to create the visual presentation, and a presenter to share the group's work with the class.
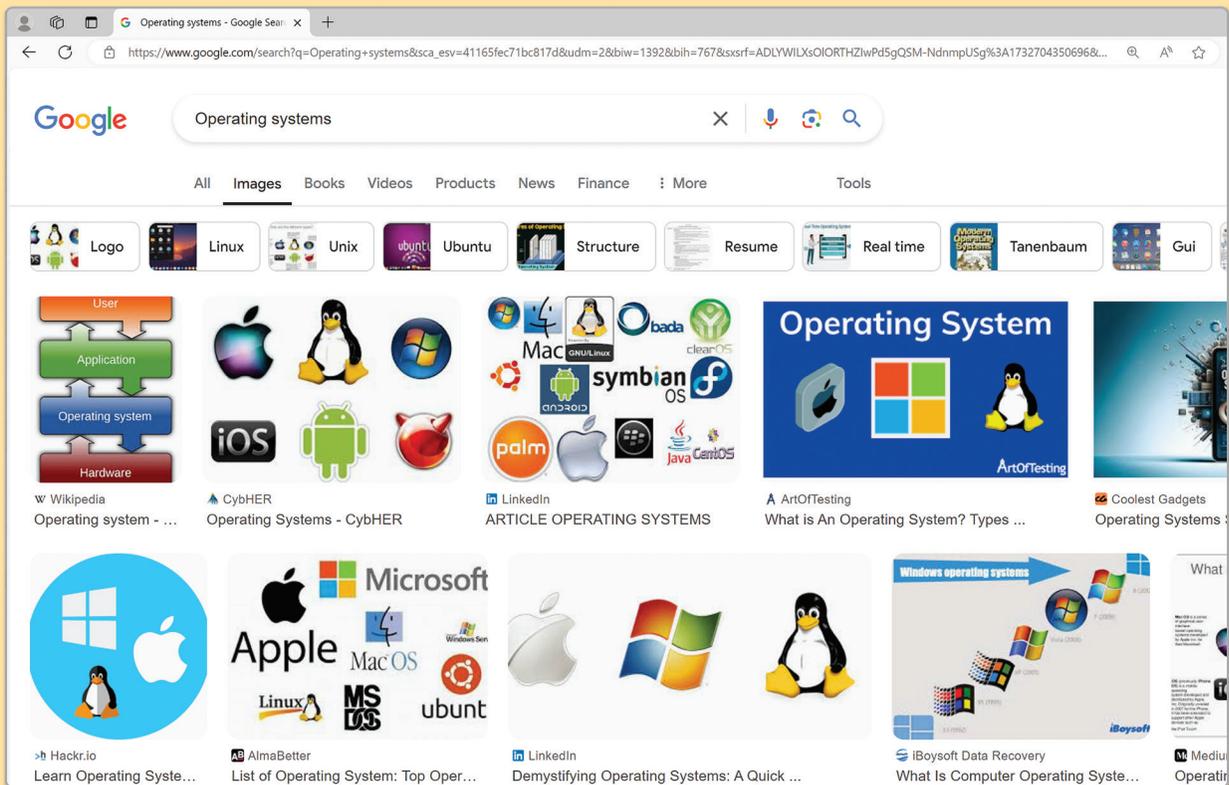
2. **Start by researching operating systems using books, search engines, or other resources. Answer the following key questions:**

- What is an operating system?

- What are two popular operating systems?

- What is one advantage and one disadvantage of each?

You can also explore further questions, such as: What types of devices rely on these operating systems? Which operating systems have you used at home or at school?

3. **Once you have finished your research and answered the previous questions, work together to create a visual representation of your findings. This could be a poster or a chart that explains the topic clearly and creatively.**

   - Make sure to include a title, a simple definition of an operating system, names and logos of the operating systems you researched, and a comparison of their advantages and disadvantages.

   - Add images or drawings of devices to make your presentation more engaging.

   - Use large, clear writing and bright colors to make your poster or chart easier to read.
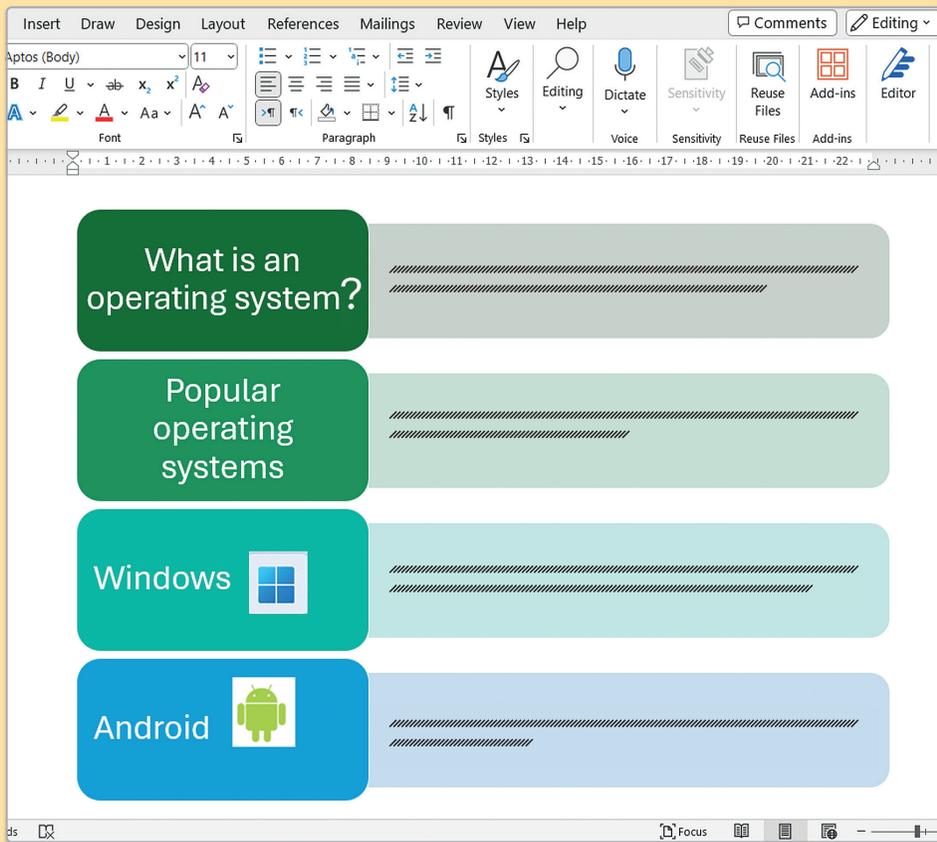
4. **Finally, your group will present your findings to the class.**

   The presenter can guide the discussion, and group members are welcome to share and explain parts of the poster or chart. Speak clearly and respectfully to help everyone understand.

Reflect

1. What did you learn about operating systems that you didn't know before?

   _____

   _____

   _____

2. How did creating a visual representation, like a poster or chart, help you understand the topic better?

   _____

   _____

   _____

3. What was the most challenging part of the project, and how did you overcome it?

   _____

   _____

   _____

4. How did your team work together to complete the project? Was everyone able to contribute?

   _____

   _____

   _____

   _____

Discover more

Google Android

There are many operating systems that you can choose to have on your device. One of them is Google Android. It is a combination of an icon-based program with menus that you can use to change your settings or open files. It is found on many smartphones and tablets.

Apple iPadOS

iPadOS is an operating system for tablets. It was first introduced in 2019 as a version of iOS made specifically for the iPad. iOS, originally launched in 2007 for the iPhone, is still used for Apple smartphones. iPadOS is an icon-based operating system where every application appears as a small shortcut on the home screen. You can also create folders to organize your apps.
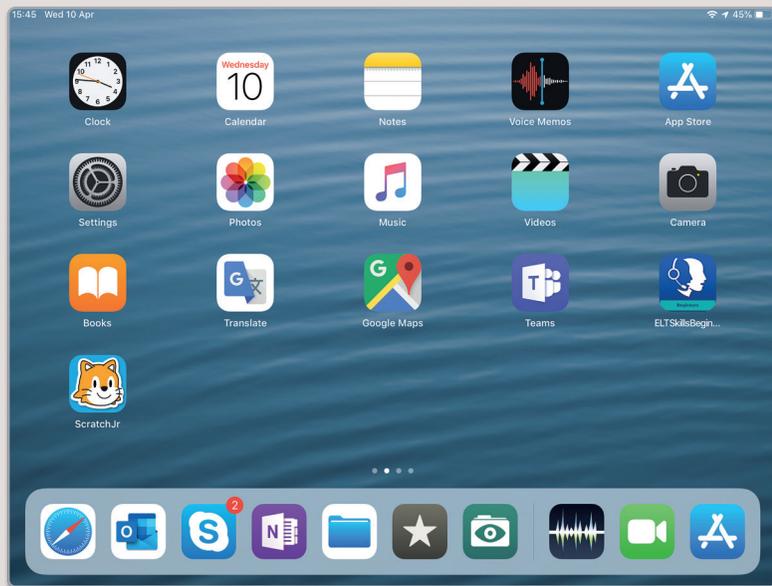
Linux

Linux is an open-source operating system, meaning it can be modified and distributed by anyone. The advantage of Linux is that it is free and is available in several versions that can be selected according to user needs.

Wrap up

Take a moment to reflect on your progress.

How confident are you in your ability to apply the following skills?

> I can identify the main parts of a computer, including the CPU and storage devices.

> I can explain the differences between desktop computers, laptops, and other devices.

> I can explain how hardware and software work together in a computer system.

> I can create, move, and rename files and folders on my computer.

> I can extract a file from a compressed folder.

> I can create a shortcut directly on the Desktop.

> I can change the basic settings on a computer.

> I can modify the position and size of objects on the main screen.

> I can remove a storage device properly.

> I can follow a series of troubleshooting steps to try and resolve Windows issues.

Key Terms

compress	lock	ROM
copy	maximize	screen resolution
CPU	minimize	shortcut
cut	operating system	shut down
Desktop	output	sleep
file	paste	software
folder	PC	storage devices
Graphical User Interface	peripheral devices	Taskbar
graphics card	personalization	tower
hard disk drive	properties	troubleshooting diagram
hardware	RAM	volume
input	Recycle Bin	ZIP
laptop	restore	