Identify Computing Devices

1. Computing Devices

1.1 Welcome

Notes:

Welcome to Identify Computing Devices. In this learning activity you will become familiar with the basic skills needed to use a computer.

1.2 Learning Objectives

Notes:

After successfully completing this activity, you will be able to:

- Identify the primary hardware of a computer.
- Identify the purposes of computer hardware components such as the system unit, monitor, printer, keyboard, mouse or touchpad, and USB ports.
- Compare various computing devices such as tablets, personal computers, laptops, and other mobile devices.
- Classify terms according to hardware, software, applications, and systems.
- Identify the components of a computer system.

1.3 Desktop Parts

Notes:

A computer is an electronic device that processes information. With a computer you can create documents like resumes, look up information on the Internet, watch movies, play games, and much more. The computer in this picture is called a desktop computer. A desktop computer is designed to be used primarily in one location.

1.4 Desktop Hardware

Notes:

Select a marker to learn more about that component.

The computer tower holds the parts of the computer that make it work and process information.

The monitor displays visual information including text and images.

The keyboard is a typewriter-style device, which uses an arrangement of buttons or keys, to act as mechanical levers or electronic switches. Keyboards are one of the main input devices for computers.

The mouse is a pointing device that communicates with the computer.

1.5 PC vs Mac

Notes:

The computer you use may be a PC, which stands for personal computer. In the photo, the computer on the left is a PC. Companies like Dell, Acer, and Hewlett Packard produce PCs.

The computer on the right is a Mac, short for Macintosh, and is made by Apple. These two types of computers work a bit differently, but this learning activity will focus on their similarities.

1.6 Laptop Hardware

Notes:

The computer in this picture is called a laptop computer. While the desktop is meant to stay in one place, a laptop is easy to set up and use in different locations. Laptops usually run the same type of programs or software as desktop computers - they're just more portable. Laptops have a built-in keyboard, screen, and touchpad. An external mouse can be plugged in to replace the touchpad.

Select a marker to learn more about that component.

The screen displays visual information including text and images.

The keyboard is a typewriter-style device, which uses an arrangement of buttons or keys, to act as mechanical levers or electronic switches. Keyboards are one of the main input devices for computers.

The touchpad is a pointing device that communicates with the computer. This is found on laptop computers and can be used instead of a computer mouse.

The computer case holds the parts of the computer that make it work and process information.

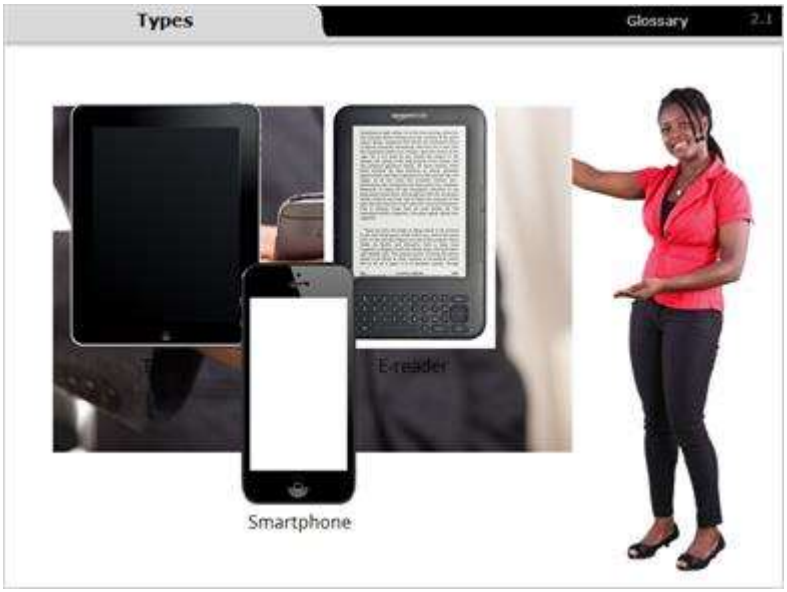
1.7 Practice Identification

Notes:

Let’s practice identifying the parts of a computer. Select each term to highlight the corresponding part on the laptop or desktop computer.

2. Mobile Devices

2.1 Types



Notes:

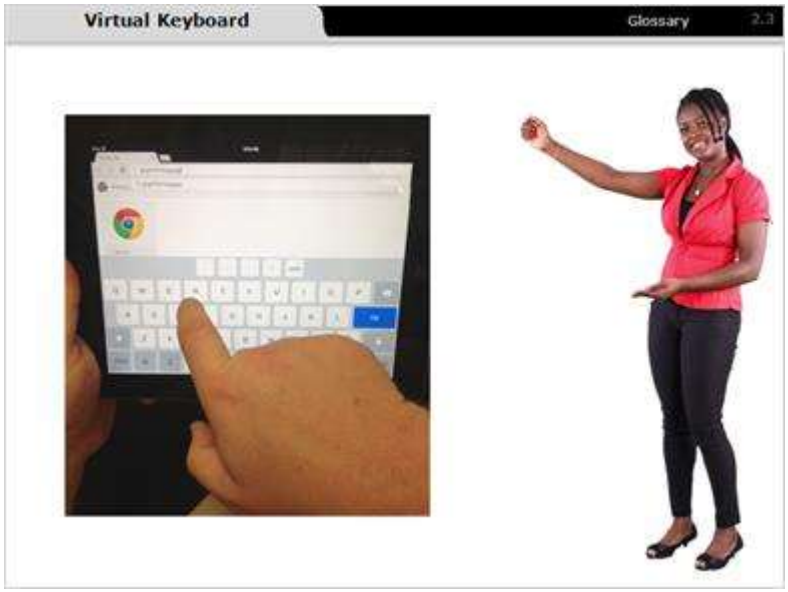
Now, let's look at a type of computer called a mobile device. Mobile devices are hand-held computers. Tablets, e-readers, and smartphones are all mobile devices and are designed to be portable and easy to use.

2.2 Navigation

Notes:

One difference between a mobile device and a laptop or desktop is the mouse or touchpad. To interact with a mobile device, you use your finger or a stylus instead of a mouse pointer. The stylus is a pen-like device used to make selections, draw, or navigate on a touch screen.

2.3 Virtual Keyboard



Notes:

Most mobile devices also have a virtual keyboard that appears when you touch a spot on the screen where you need to enter text.
The keyboard on a mobile device is similar to the external keyboard on a desktop computer except the mobile device's keyboard only appears when you need it and you type directly on the screen.

2.4 Smartphone

Notes:

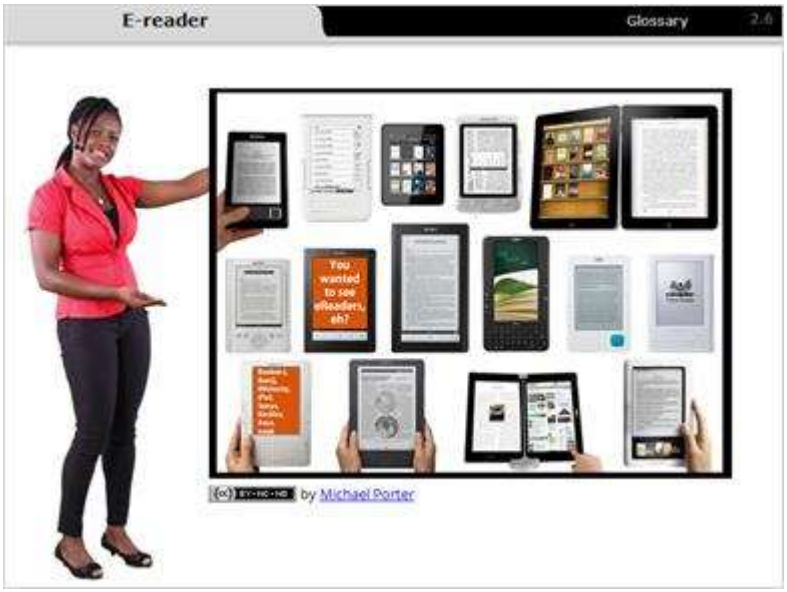
A smartphone is a powerful mobile device that runs many different computer programs or applications in addition to providing phone service. Smartphones can be used for browsing the Internet, watching videos, playing games, reading e-books, and using email.

2.5 Tablet

Notes:

A tablet is a mobile computing device. It contains a touchscreen, uses a virtual keyboard, and is very light and portable.

2.6 E-reader



Notes:

The last type of mobile devices we will learn about are e-readers. E-readers are a type of tablet computer created mainly for reading e-books.

There are a variety of e-readers. Some are black and white only and are designed to look like the page of a book. Some e-readers have an LCD screen, which allows the use of color, but they are more difficult to read in direct sunlight. E-readers with a color LCD screen usually allow the user to perform more tasks and are more like a tablet computer.

3. Computer Systems

3.1 Introduction

Notes:

A computer is a system of many parts working together.

The physical components, which you can see and touch, are called hardware. The set of instructions that tells the hardware what to do is called the software. The computer system is made up of both hardware and software. You need both hardware and software for a computer system to work.

3.2 Hardware

Now let's look at hardware in more detail. Hardware are the parts of a computer you can see and touch, including the case and everything inside it. Click on each item to identify the internal and external hardware components in a computer system.

1. Monitor: The monitor is an electronic visual display.
2. Motherboard: The motherboard is the main printed circuit board found in computers. It holds many of the crucial electronic components of the system, including the central processing unit (CPU) and memory.
3. CPU (Microprocessor): The CPU is often referred to as the "brain" of your computer. This tiny, rectangular chip carries out the instructions of a computer program by performing the basic arithmetic, logical, control, and input and output operations specified by the instructions.
4. Random Access Memory (RAM): RAM is a form of computer data storage. RAM storage doesn't keep its data when powered off.
5. Expansion Card: The expansion card is a printed circuit board that can be inserted into an electrical connector or expansion slot on a computer motherboard to add functionality to a computer system.
6. Power Supply Unit: The primary function of a power supply is to convert one form of electrical energy to another. Because of this, power supplies are sometimes referred to as electric power converters.
7. Optical Disk Drive: The optical disk drive uses laser light, or electromagnetic waves, to read or write data to, or from, optical discs. Optical drive is the generic name but the drives are specifically described as "CD," "DVD," or "Blue-Ray."
8. Hard Disk Drive: The hard disk drive is a data storage device used for storing and retrieving digital information. An HDD retains its data even when powered off.
9. Mouse: The mouse is a pointing device that communicates with the computer.
10. Keyboard: A computer keyboard is a typewriter-style device, which is used as a text entry interface to type text, numbers, and commands to the computer's operating system.

3.3 Keyboard

Notes:

Now let's look at one very important piece of hardware, the keyboard. It's a device that allows you to select buttons and keys to enter information into the computer. It's the primary way you enter information to create a document such as a resume or fill out an online application for college.

There are different parts to the standard keyboard. Click on each label to identify each one's purpose.

Main or Alphanumeric keys. These keys include the same letters, numbers, punctuation, and symbols found on a traditional typewriter.

Control keys. These keys are used alone or in combination to perform specific actions. The most frequently used control keys are CTRL, ALT, the Windows logo key, and ESC.

Navigation keys. These keys are used for moving around in documents and webpages and allow you to edit text. They include the arrow keys, HOME, END, PAGE UP, PAGE DOWN, DELETE, and INSERT.

Function keys. The keys are labeled as F1, F2, F3, up to F12. The purpose of these keys differs from program to program.

Numeric keypad. The numeric keypad is handy for entering numbers quickly. The keys are grouped together in a block like a conventional calculator or adding machine.

3.4 Special Keys 1

Notes:

There are a few specific keys you need to be familiar with. Click on each label to investigate the purpose of each key.

Space Bar -This bar adds a blank space.

Shift - This key is used for either capitalizing a letter or accessing the symbols above the number and punctuation keys. When you hold down the shift key, either the capital letter is typed or the icon on the top of the key is typed.

Backspace (on some keyboards this is delete) - Use this button if you want to delete something.

Enter - You press enter to submit something or go to the next step. For example, you press enter to go to the next line in a word processing document or go to a website after typing in the address.

Caps Lock - When you press this button, everything you type is capitalized. Press it again to turn it off and go back to typing lower case letters.

Tab - This button is used to indent text in a document or an email. You can also use it to jump to the next field in a form.

Control Key - This key alters the function of another key.

3.5 Special Keys 2

Notes:

Finally, let's explore the arrow keys and the number lock.

Arrow Keys - These navigation keys help you to go up, down, left, and right in a word processing document or to scroll up and down on a webpage.

Number Lock - Some keyboards have a number pad on the side. If you turn on the number lock, the number pad will type numbers. If the number lock is not on, the number pad becomes a navigation pad using the arrow keys.

3.6 Software

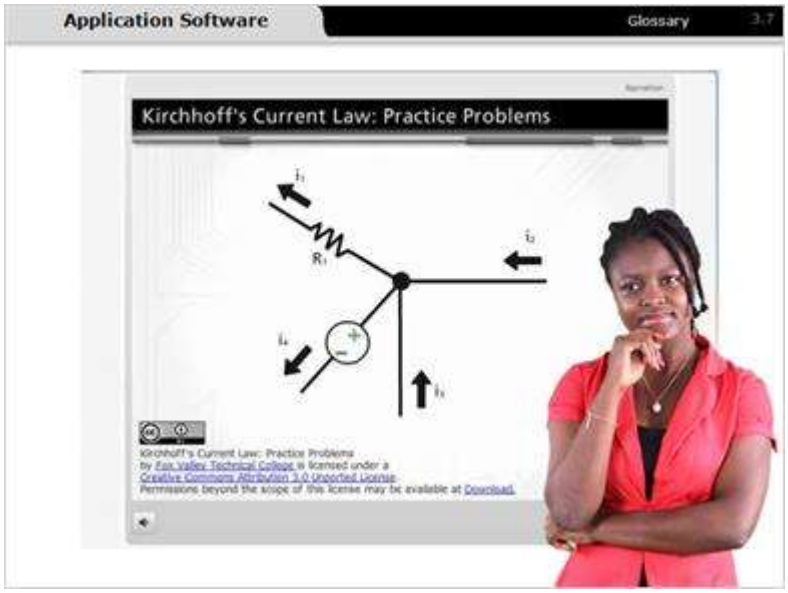
Notes:

There are two main categories of software: application and system.

Application software lets you create a document, browse the Internet, or play a game.

System software, or operating system software, is used by your computer to manage hardware, application software, and all communications.

3.7 Application Software



Notes:

An application is software that helps you to perform specific tasks.

Some examples of application software are:

- Word processing. Microsoft Word is used to create documents such as resumes, cover letters, and homework assignments.
- Web browsers allow you to search the Internet and access websites.
- And computer games used for entertainment or learning.

3.8 System Software

Notes:

System software, or operating system software, is used by your computer to manage hardware, application software and all communication. The three most common operating systems are Microsoft Windows, Apple Mac OS X, and Linux.

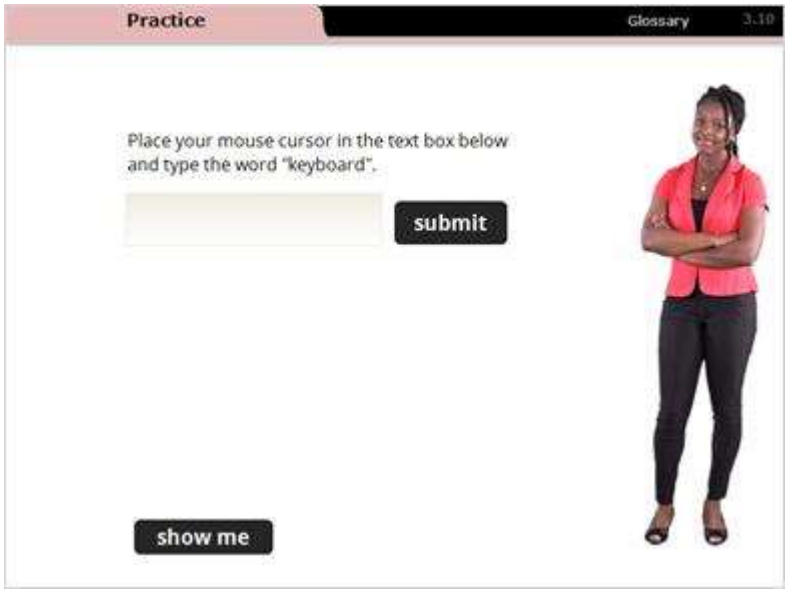
Each operating system has a different look and feel, but most of the basic principles are the same.

3.9 Practice Computer System

Notes:

Select the correct response to the question.

3.10 Practice Keyboard



Notes:

Place your mouse cursor in the text box and type the word “keyboard” in the text box.

3.11 Practice Computer Systems

Notes:

The monitor, computer tower, keyboard and mouse are examples of:

3.12 Practice Computer Systems

Notes:

A web browser is an example of:

3.13 Practice Software

Notes:

OS X is an example of:

4. Review

4.1 Computer Parts

Notes:

Now you've learned to identify the parts of a computer:

- monitor or screen
- computer tower or computer case
- mouse or touchpad
- keyboard

4.2 Hardware/Software

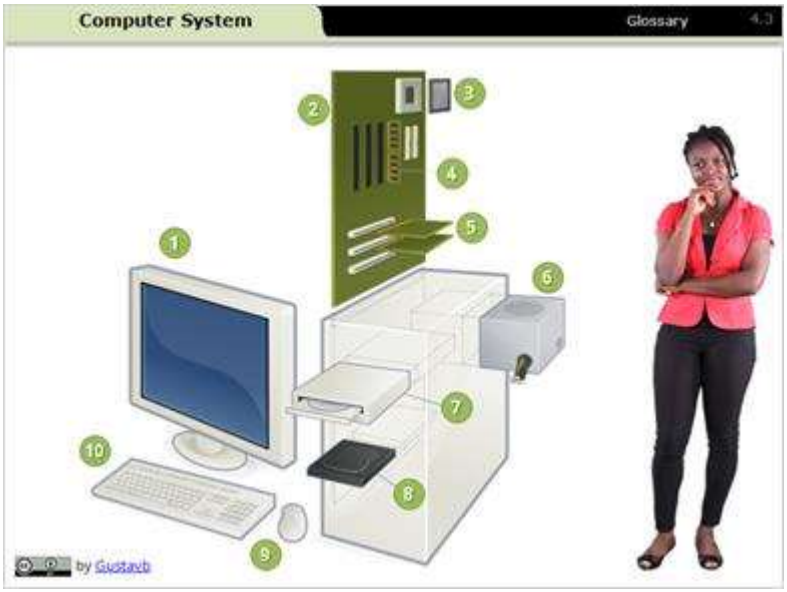
Notes:

Let's review what we've learned about hardware and software.

Hardware refers to the physical parts of the computer that can be touched and seen. They can be external, internal, or inside the computer case. Examples include the keyboard, CPU, and hard disk drive.

Software refers to the set of instructions that tells the computer what to do. It is categorized as application and systems software. Applications software is designed for completing a specific task like browsing the web using Internet Explorer. System software manages the computer hardware, application software, and all communications. Windows 7 is one example of an operating system.

4.3 Computer System



Now let's review the entire computer system in detail. Hardware refers to the computer parts you can see and touch including the case, everything inside it, as well as application and systems software. You need both hardware and software for a computer system to run.

1. Monitor: The monitor is an electronic visual display.
2. Motherboard: The motherboard is the main printed circuit board found in computers. It holds many of the crucial electronic components of the system, including the central processing unit (CPU) and memory.
3. CPU (Microprocessor): The CPU is often referred to as the "brain" of your computer. This tiny, rectangular chip carries out the instructions of a computer program by performing the basic arithmetic, logical, control, and input and output operations specified by the instructions.
4. Random Access Memory (RAM): RAM is a form of computer data storage. RAM storage doesn't keep its data when powered off.
5. Expansion Card: The expansion card is a printed circuit board that can be inserted into an electrical connector or expansion slot on a computer motherboard to add functionality to a computer system.
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9. Mouse: The mouse is a pointing device that communicates with the computer.
10. Keyboard: A computer keyboard is a typewriter-style device, which is used as a text entry interface to type text, numbers, and commands to the computer's operating system.

4.4 Mobile Devices

Notes:

Mobile devices are a type of hand-held computer designed to be portable and easy to use. Click on each device to review each one.

4.5 Virtual Keyboard

Notes:

Most mobile devices use a virtual keyboard that appears on the screen when you need to enter text.

4.6 Final Review

Notes:

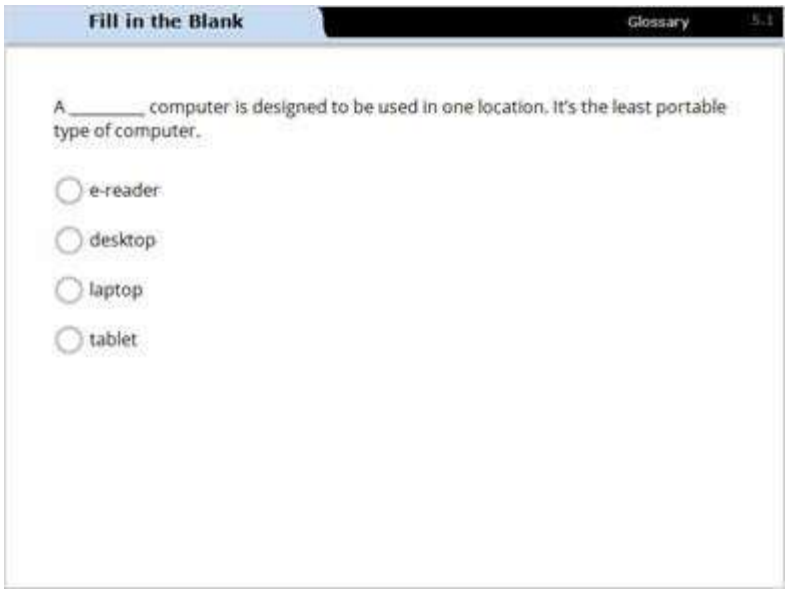
Think about all the different types of computing devices.

Which type would be best for you?

- Do you need a computer device that is portable?
- Do you need a device that works as a phone too?
- What application and operating system software should it have?

5. Check Your Knowledge

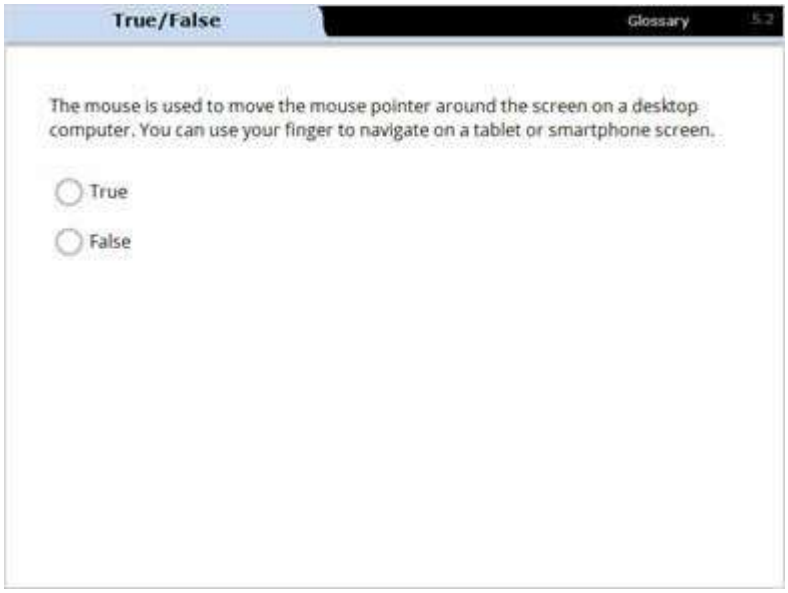
5.1 Fill in the Blank



Notes:

Select the correct answer.

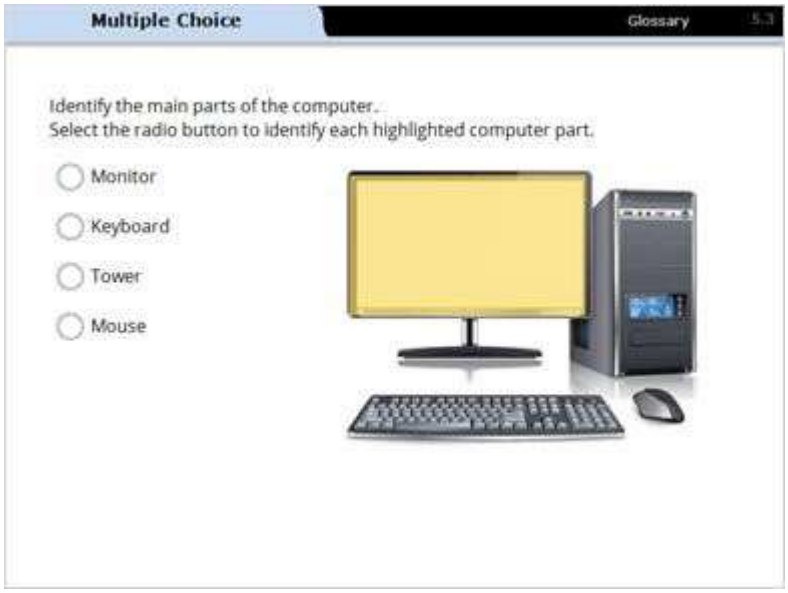
5.2 True/False



Notes:

Select the correct answer.

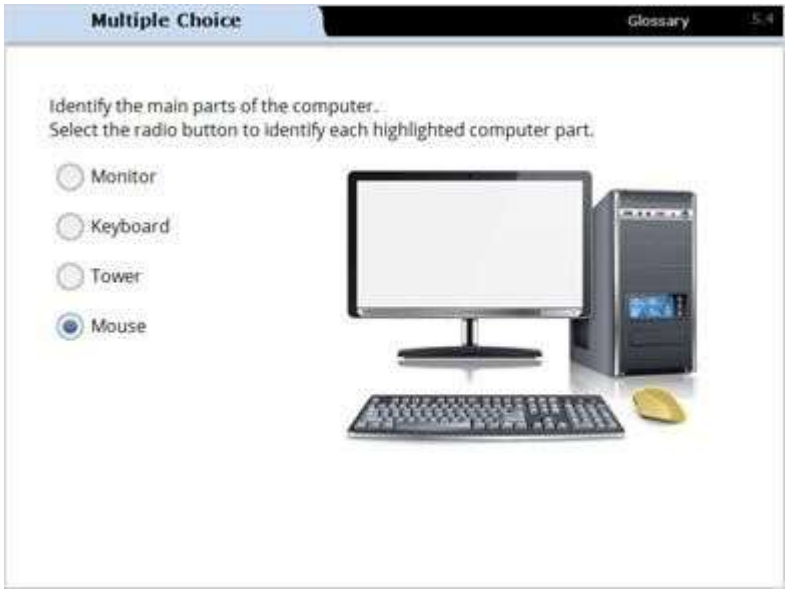
5.3 Multiple Choice



Notes:

Select the correct answer.

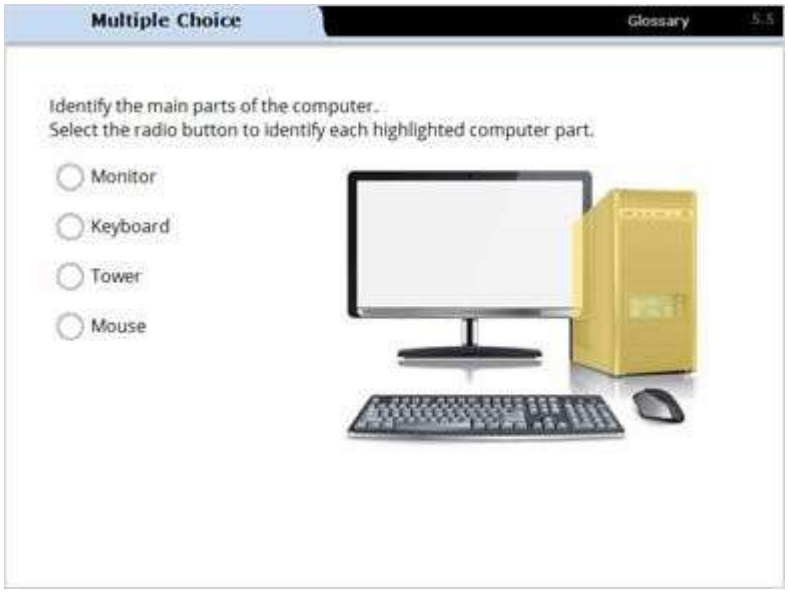
5.4 Multiple Choice



Notes:

Select the correct answer.

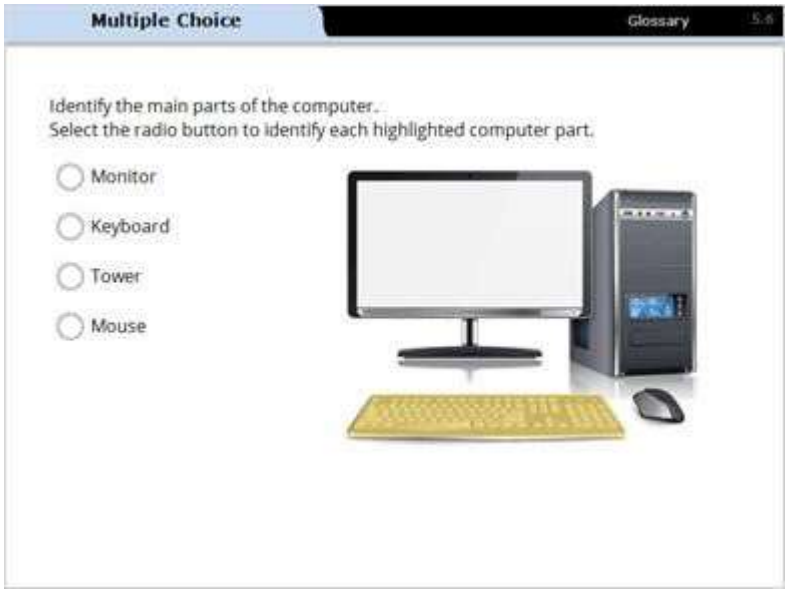
5.5 Multiple Choice



Notes:

Select the correct answer.

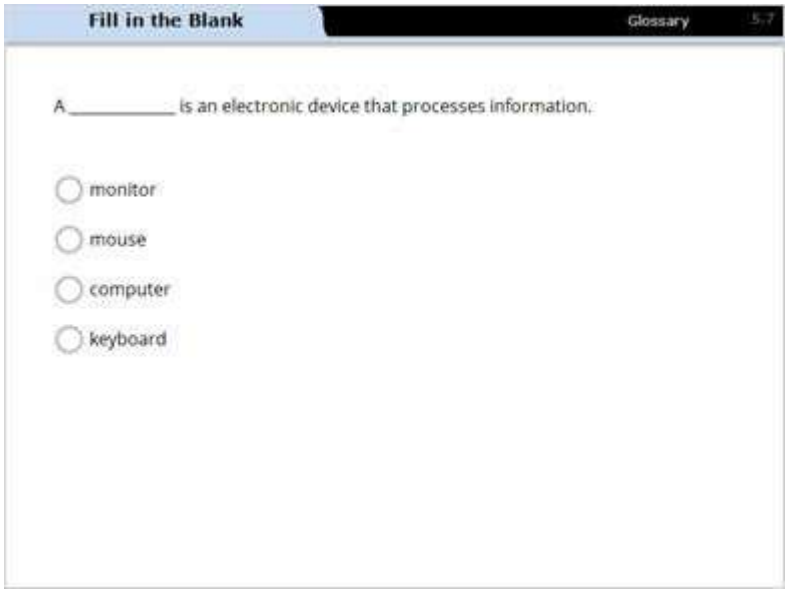
5.6 Multiple Choice



Notes:

Select the correct answer.

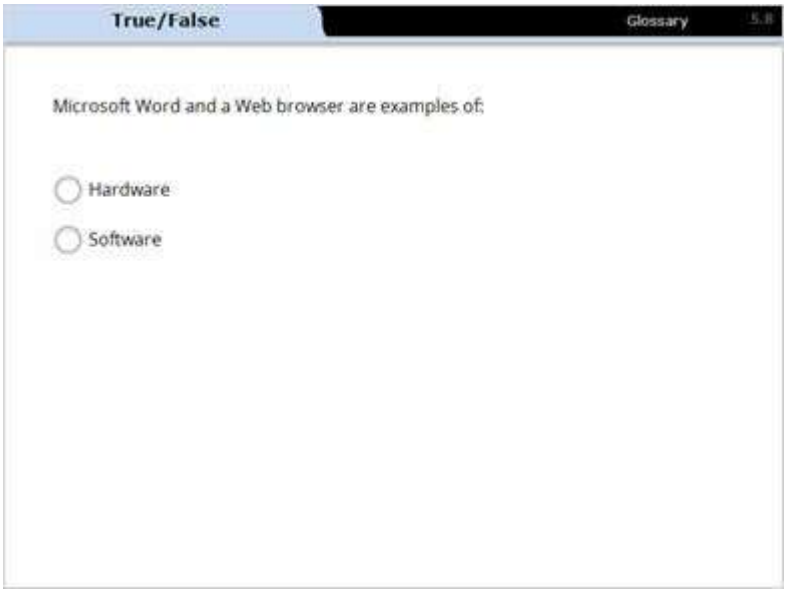
5.7 Fill in the Blank



Notes:

Select the correct answer.

5.8 True/False



Notes:

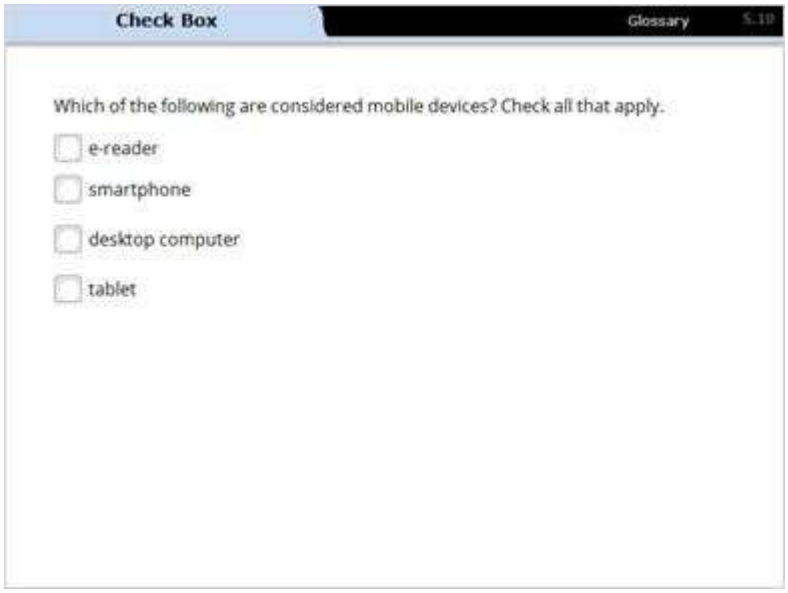
Select the correct answer.

5.9 True/False

Notes:

Select the correct answer.

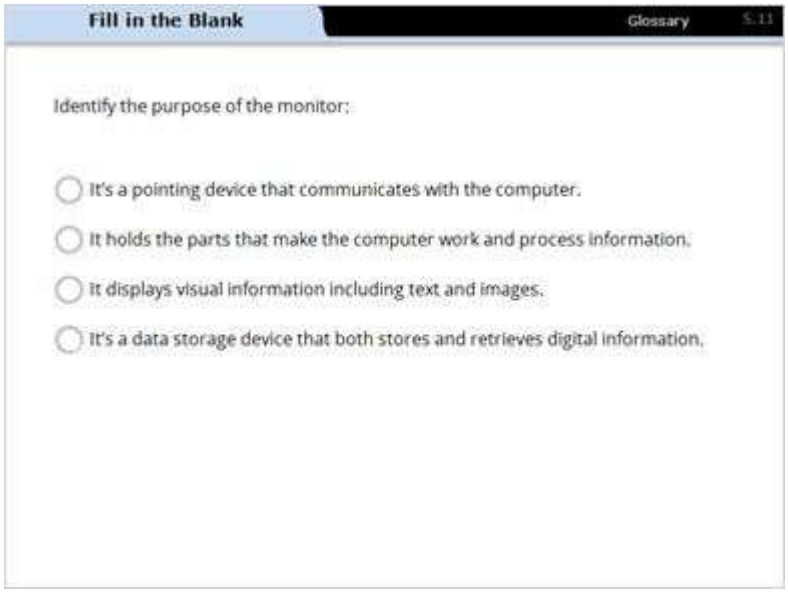
5.10 Checkbox



Notes:

Select the correct answer(s).

5.11 Fill in the Blank



Notes:

Select the correct answer.

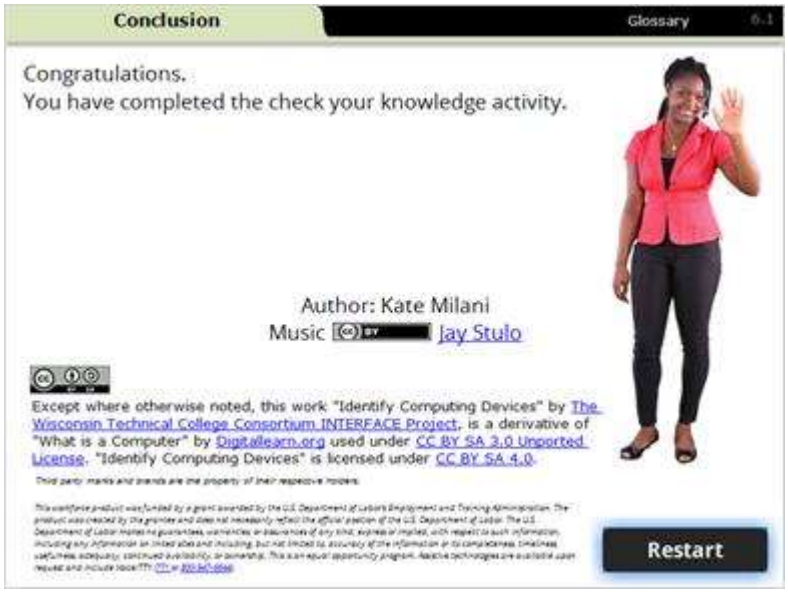
5.12 Fill in the Blank

Notes:

Select the correct answer.

6. Conclusion

6.1 Conclusion



Notes:

Congratulations. You have completed the check your knowledge activity.

Use your mouse to click on the restart button if you would like to repeat this module.