



SUBJECT AND GRADE	Computer Applications Technology Grade 12	
TERM AND WEEK	Term 1 Week 2	
TOPIC	The processing cycle, hardware and the interpretation of advertisements for better judgment when buying equipment and software.	
PURPOSE OF LESSON	This lesson aims to develop analytical skills needed to make informed decisions regarding computer equipment.	
RESOURCES	Paper based resources	Digital resources
	DBE textbook (DBE p 15-64) Any suitable textbook or notes used in your school for CAT.	https://www.easypcmod.com/list-factors-consider-buying-computer-179 DBE Digital Textbook) https://wcedportal.co.za/eresource/87991
INTRODUCTION	In Grades 10 and 11 you have already learned the most important concepts about hardware. Now you are going to use these concepts to make informed decisions about troubleshooting and purchasing computers.	
CONCEPTS AND SKILLS	<p>The processing cycle:</p> <pre> graph TD Input[Input] --> Processing[Processing] Processing --> Output[Output] Output --> Storage[Storage] Storage --> Communication[Communication] Communication --> Input Storage --> Processing Processing <--> Storage Storage <--> Output </pre> <p>Input</p> <ul style="list-style-type: none"> • Keyboard • Mouse • Touch pad • Touch screen • Scanner • Digital camera • Webcam • Microphone, etc. <p>Processing</p> <ul style="list-style-type: none"> • CPU • RAM <p>Output</p> <ul style="list-style-type: none"> • Screen • Printer • Data projector • Touch screen • Speakers • Earphones, etc. <p>Storage</p> <ul style="list-style-type: none"> • Hard drive • Flash drive • Optical media(CD/DVD) • External hard drive • SSD <p>Communication</p> <ul style="list-style-type: none"> • ADSL-modem/router • Wifi/Hotspot • Switch • Cellular modem (3G/ LTE) 	

Input devices:

a) Keyboard

- ⇒ Discuss the different **types** of keyboards.
- ⇒ Identify the **uses** of keyboards.
- ⇒ Discuss the **advantages** of using keyboards.
- ⇒ Discuss the **limitations** of keyboards.
- ⇒ Discuss **troubleshooting** if a keyboard fails.
- ⇒ What should I consider if I want to **buy** a keyboard?



b) Mouse

- ⇒ Discuss the different **types** of mice.
- ⇒ Identify the **uses** of mice.
- ⇒ Discuss the **advantages** of using mice.
- ⇒ Discuss the **limitations** of mice.
- ⇒ Discuss **troubleshooting** if a mouse fails.
- ⇒ What should I consider if I want to **buy** a mouse?



c) Touch panel

- ⇒ Identify the **uses** of the touch panel.
- ⇒ Discuss the **advantages** of using touch panels.
- ⇒ Discuss the **limitations** of touch panels.
- ⇒ Discuss **troubleshooting** if the touch panel fails.



d) Touch screen

- ⇒ Identify the **uses** of the touch screen.
- ⇒ Discuss the **advantages** of using a touch screen.
- ⇒ Discuss the **limitations** of touch screens.
- ⇒ Discuss **troubleshooting** if a touch screen fails.



e) Scanner

- ⇒ Identify the **uses** of the scanner.
- ⇒ Discuss the **advantages** of using a scanner.
- ⇒ Discuss the **limitations** of scanner.
- ⇒ Discuss **troubleshooting** if a scanner fails.



In preparation for the activities below:

Study the chapters on hardware in your textbook or notes.

Write a short paragraph on input, processing, output, storage and communication to explain what it is and how it functions.

Write a short paragraph on each of the concepts on the left as indicated.

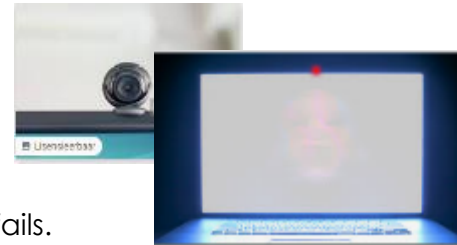
f) Digital camera

- ⇒ Identify the **uses** of the digital camera.
- ⇒ Discuss the **advantages** of using a digital camera.
- ⇒ Discuss the **limitations** of a digital camera.
- ⇒ Discuss **troubleshooting** if a digital camera fails.
- ⇒ What should I consider if I want to **buy** a digital camera?



g) Webcam

- ⇒ Identify the **uses** of a webcam.
- ⇒ Discuss the **advantages** of using a webcam.
- ⇒ Discuss the **limitations** of a webcam.
- ⇒ Discuss **troubleshooting** if a webcam fails.



h) Microphone

- ⇒ Identify the **uses** of the microphone.
- ⇒ Discuss the **advantages** of using a microphone.
- ⇒ Discuss the **limitations** of a microphone.
- ⇒ Discuss **troubleshooting** if a microphone fails.



2) **Output devices:**

a) Monitor / Display / Display

- ⇒ Identify the **uses** of monitors/ screens.
- ⇒ Discuss the **advantages** of using monitors/ screens.
- ⇒ Discuss the **limitations** of monitors/ screens.
- ⇒ Discuss **troubleshooting** if a monitor/ screen fails.
- ⇒ What should I consider if I want to **buy** a monitor/ screen?



b) Speakers / Headphones

- ⇒ Identify the **uses** of speakers.
- ⇒ Discuss the **advantages** of using speakers.
- ⇒ Discuss the **limitations** of speakers.
- ⇒ Discuss **troubleshooting** if speakers fail.



Write a short paragraph on each of the concepts on the left as indicated.

c) Printers

- ⇒ Identify the **uses** of printers.
- ⇒ Discuss the **advantages** of using printers.
- ⇒ Discuss the **limitations** of printers.
- ⇒ Discuss **troubleshooting** if a printer fails.
- ⇒ What should I consider if I want to **buy** a printer?
- ⇒ Why should a home office not buy a 3D printer?



d) Data projector

- ⇒ Identify the **uses** of data projectors.
- ⇒ Discuss the **advantages** of using data projectors.
- ⇒ Discuss the **limitations** of data projectors.
- ⇒ Discuss **troubleshooting** if a data projector fails.



3) **Storage devices:**

a) Hard drives

- ⇒ Identify the **uses** of hard drives.
- ⇒ Discuss the **advantages** of using hard drives.
- ⇒ Discuss the **limitations** of hard drives.
- ⇒ Discuss **troubleshooting** if a hard drive fails.



b) External hard drives

- ⇒ Identify the **uses** of external hard drives.
- ⇒ Discuss the **advantages** of using external hard drives.
- ⇒ Discuss the **limitations** of external hard drives.
- ⇒ Discuss **troubleshooting** if an external hard drive fails.



c) Flash drive

- ⇒ Identify the **uses** of flash drives.
- ⇒ Discuss the **advantages** of using flash drives.
- ⇒ Discuss the **limitations** of flash drives.
- ⇒ Discuss **troubleshooting** if a flash drive fails.
- ⇒ What should I consider if I want to **buy** a flash drive?



Write a short paragraph on each of the concepts on the left as indicated.

d) Optical media (CD / DVD)

- ⇒ Identify the **uses** of optical media.
- ⇒ Discuss the **advantages** of using optical media.
- ⇒ Discuss the **limitations** of optical media.
- ⇒ Discuss **troubleshooting** if optical media fails.



e) Solid State Drive

- ⇒ Discuss the **advantages** of using an SSD.
- ⇒ Discuss the **disadvantages** of using an SSD.



4) **Communication devices:**

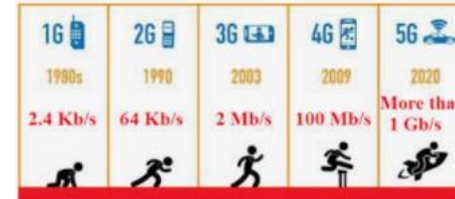
a) ADSL Router

- ⇒ What is the **function** of an ADSL router?
- ⇒ Discuss the **advantages** of using an ADSL router.
- ⇒ Discuss the **limitations** of an ADSL router.



b) 3G/4G

- ⇒ What is 3G/4G?
- ⇒ Discuss the **advantages** of using 3G.
- ⇒ Discuss the **limitations** of 3G.
- ⇒ Discuss the use of WIFI versus 3G in tablets.



5) **Processing**

a) CPU

- ⇒ What is the **function** of the CPU?
- ⇒ Explain what a GPU is?



GPU (Graphics Processing Unit) Definition



Write a short paragraph on each of the concepts on the left as indicated.

b) RAM

- ⇒ What is the **function** of RAM?
- ⇒ What other terms are used instead of RAM?



Write a short paragraph on each of the concepts on the left as indicated.

Knowledge of the following concepts is required to interpret computer advertising and do the following activities:

• Desktop versus laptop	• Application software
• Hard drive	• Types of keyboards and mice
• Motherboard	• Size and type of display / monitor
• Ports	• Connectivity
• CPU	• Operating system, system software
• RAM	• Storage, memory

ACTIVITIES / ASSESSMENT

1. Study the specifications of the laptop in the advertisement on the right and answer the questions that follow.
 - 1.1 To which general software category does Office 365 belong?
 - 1.2 Give TWO possible reasons why screen resolution in addition to screen size is indicated in the specifications above.
 - 1.3 Give TWO reasons why newer models of laptops do not have optical drives.
 - 1.4 Give ONE possible reason why an SSD is specified instead of a hard drive for this computer.
 - 1.5 Give TWO features of a USB port that make it such a popular choice to connect peripherals.
 - 1.6 Discuss why you would not expect to see a VGA port in the specifications of this laptop AND name which other port you would rather expect to find.

Intel Core i5
 15.6 "screen (1920 x 1080)
 128 GG ('GB') - VTA ('SSD')
 3 x USB ports
 VGA port
 Webcam with microphone
 802.11 b / w / n
 SD card reader
 6 cell battery
 Office 365 (1 year license)

	<p>1.7 Name TWO specifications in the advertisement that would make it possible to set up biometric security on this laptop.</p> <p>1.8 Name an essential specification that affects performance, which is NOT mentioned in this advertisement.</p> <p>2.1 Give ONE reason why fiber is more reliable than ADSL.</p> <p>2.2 Give TWO advantages of using RFID scanning technology over barcodes in a warehouse environment.</p> <p>3.1 Explain the difference between RAM and hard drive when referring to their functions.</p> <p>3.2 Your wired mouse suddenly stops working. Give TWO ways in which you can solve the problem.</p> <p>3.3 Most laptops have an integrated webcam. What does the term integrated refer to?</p> <p>3.4 Name TWO disadvantages of optical disks.</p> <p>3.5 Hard drive solid state SSD (Solid State Drives) is becoming more and more popular.</p> <p>3.5.1 What is the main advantage of an SSD?</p> <p>3.5.2 Name TWO disadvantages of an SSD?</p> <p>3.6 Name TWO specifications, besides printing in color, cost and warranty, which you will look at if you want to buy a printer.</p> <p>3.7 Give TWO examples of specialized input or output devices that would help a visually impaired person.</p> <p>4.1 Give ONE reason why fibre is more reliable than ADSL.</p> <p>4.2 Give TWO advantages for using RFID scanning technology above barcodes in a warehouse environment.</p>
CONSOLIDATION	Find and study an advertisement of an entry level computer or an advertisement of any of the other hardware items you studied in the lesson above. Make sure that you understand all the concepts mentioned in the advertisement. Explain the advertisement and all the concepts mentioned in it to a family member or friend who does not know much about technology.
VALUES	Improving and consolidating basic knowledge of computer hardware.