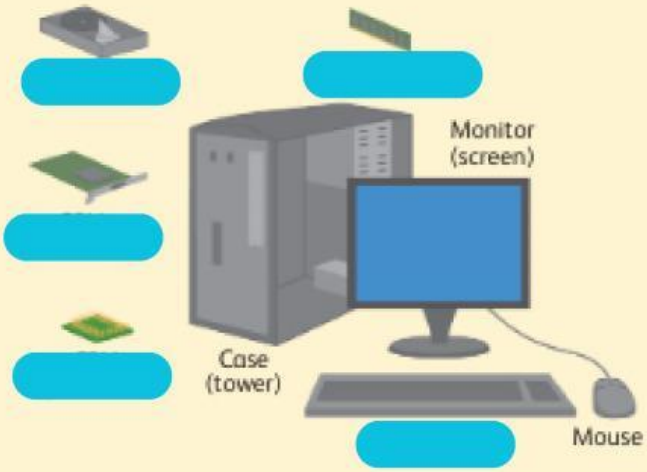
Hardware and software selection

Learn

Computer hardware refers to all the physical components of a computer. Hardware components include:

- the central processing unit (CPU)
- mouse
- keyboard
- storage.



Software refers to all the programs that tell the physical components what to do. Software components include system software, like the operating system, and application software, such as:

- word processing software
- spreadsheet software
- presentation software
- video editing software.

Hardware and software are complementary. A computing device can produce useful outputs only when both hardware and software work together.

Some of the factors to consider when choosing software and hardware are:

- functionality
- compatibility
- cost
- speed
- aesthetics.



Understanding these factors and balancing them against each other is very important when choosing hardware and software.

Functionality

Functionality means what the user wants to use the hardware and software for. Whether purchasing a complete computer system, or hardware or software components, you need to ensure it is going to meet your requirements.

Keywords

functionality: what a device can do

compatibility: if hardware and software can work together

aesthetics: what something looks like

LIVEWORKSHEETS

For example:

- A business person needs a light laptop that is easy to carry when travelling.
- A graphic designer needs a powerful computer with a large screen.
- An accountant might need two large screens and a high-quality keyboard and mouse.



Not all software runs on all hardware. For example, games software only works on one type of games console. And software for a tablet does not normally work on a laptop.

The fastest, latest and nicest computers are more expensive. But not everyone needs the fastest or latest computers. Lots of people are happy with something slower but cheaper.

Some software needs faster computers than others.

- You need a fast computer to play games and edit videos.
- You do not need a fast computer to look at websites or use a word processor.



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Aesthetics means how something looks. Different people think different things look good.

- A business person might like a computer to have one simple colour. This looks tidy and professional.
- A gamer might like a computer to have lots of colours and flashing lights. This looks fun and modern.







LIVEWORKSHEETS

Practise

1 State which of the following statements are true or false.
   a Functionality is important when selecting hardware.
   b Both hardware and software are needed for a computer to function efficiently.
   c Functionality is what the user wants to use the hardware or software for.
   d It is always important to buy the most expensive hardware.
2 Give two examples of functionality with reference to primary and secondary storage.
3 Explain the term 'compatibility' with reference to hardware and software.
4 What are some of the things that must be considered when purchasing hardware and software?
5 Why is processor speed important when purchasing hardware and software?
6 When selecting a secondary storage component for a computer, what device considerations will you have to make?
7 Explain the meaning of 'aesthetics'.
8 When purchasing a laptop, what are some of the considerations you may have to make?

Answer sheet

1

a

b

c

d

2

3

4

LIVEWORKSHEETS

Answer sheet

5

6

7

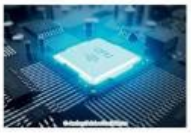
8

LIVEWORKSHEETS

Name: _____

Hardware and software selection

Direction: Match the definition and the words.

gigahertz (GHz)	●	●	used to measure computer processing speed 
processor	●	●	a computer chip inside a computer that executes instructions on behalf of programs 
compatibility	●	●	what a device can do 
functionality	●	●	if hardware or software can work together 
aesthetics	●	●	what something looks like 

LIVEWORKSHEETS

Hardware and software selection

Name:_____

Read through the **Learn** panel on pages 47–49. One user is planning to use their computer for word processing, spreadsheets and email. Another user wants to use their computer for online computer games.

You have been asked to pick the most suitable hardware for each user. Cut out and paste the cut-outs in the table below.

Factors	 © Used with permission from Microsoft	 © Nezpyroda Stock Photo
Functionality • Memory • Storage		
Compatibility • Video • Operating system		
Cost		
Speed • Processor		
Aesthetics		

£250	On-board video Windows
Graphic Card Windows and macOS®	4.0 GHz
 © Vetkit/Adobe Stock Photo	4 GB RAM 1 TB HDD
8 GB RAM 2 TB SSD	2.0 GHz
£2000	 © Charnsitr/Adobe Stock Photo

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Unit 3 Word search

Name:_____

Can you find all the hidden words?

S B O Z P R I M A R Y P E D
W N I B B L E P S B S E R F
U Y M Z G Y F A Z V T C H R
Q Z J A I E R U O B E X N P
R N M E M O R Y C A R D U B
E S Y H N V F Q E J A J F L
W D Y A N L G I G A B Y T E
U S B D R I V E V B Y J A H
U G K L G K T I S D T R A Q
T V Q J Y L X V M V E E M M
X J D C W E E J A O I D R D
Y X F U S Z D M W L Q H A P
S E C O N D A R Y N C U V P
A D Y N W N U M U E K D C Z

Hidden words

gigabyte
terabyte
nibble
USB drive
memory card
primary
secondary

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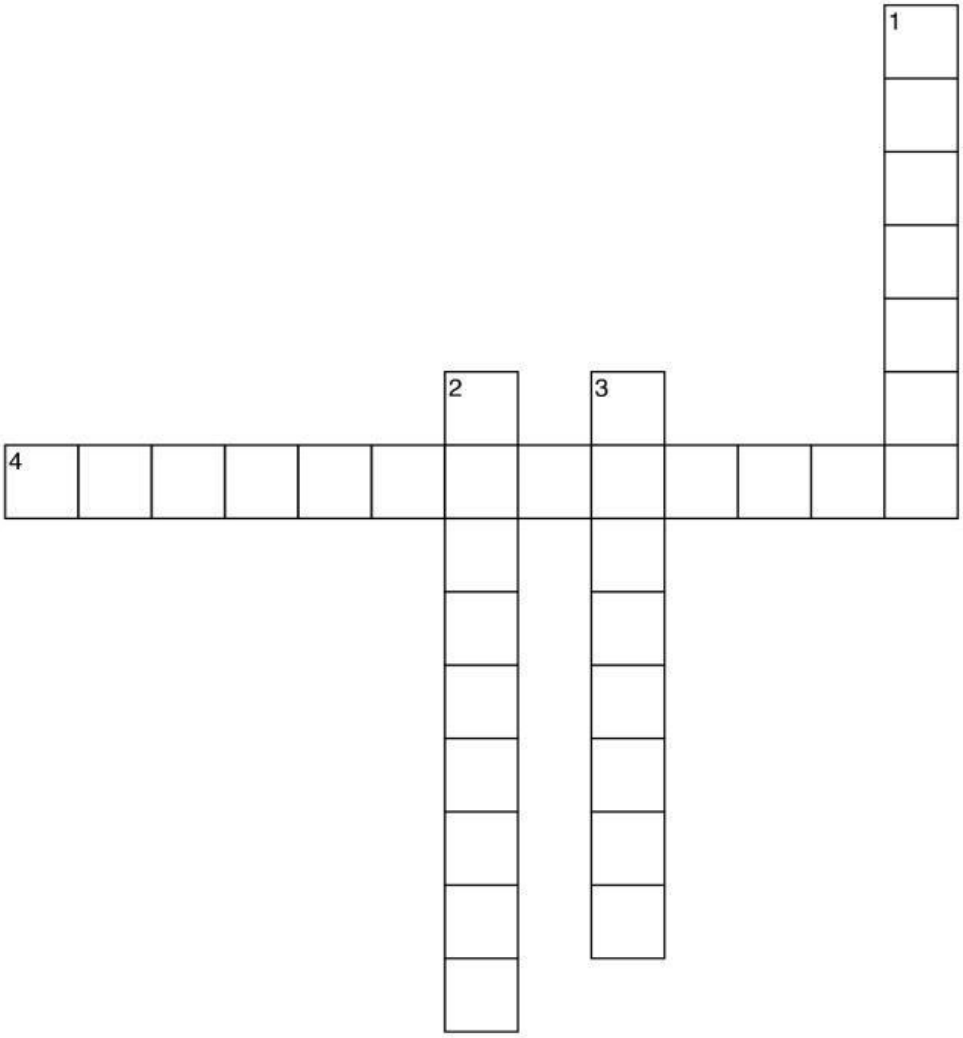
LIVEWORKSHEETS

Unit 3 Crossword

Name:_____

Solve the following puzzle based on the clues given!



Across

[4] Checking that new software will work with existing hardware is a example of checking what?

Down

[1] What kind of storage holds data and instructions temporarily?

[2] The speed of a processor is measured in what?

[3] What is equal to 1024 megabytes?

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