Computer Types & Architecture

Unit 5

Objectives of today's class

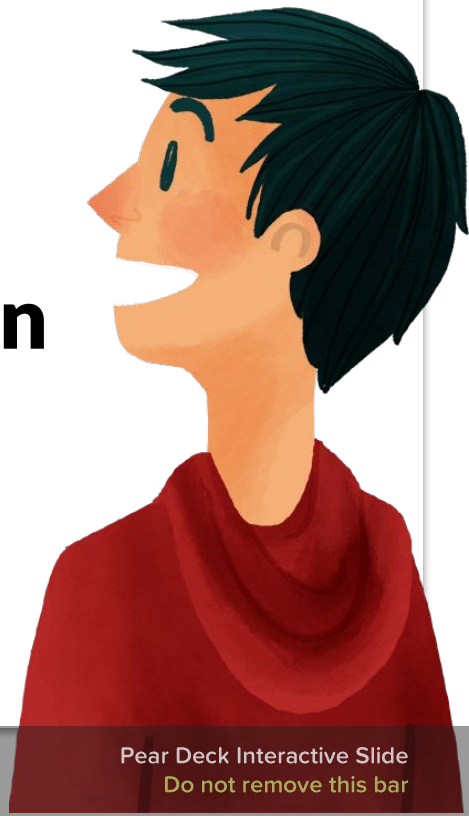
- to learn about ***different types of computers*** and ***understand the difference*** between them
- to ***review comparative and superlative forms*** in English and practice using them correctly
- to review the ***basic components of a computer*** and understand how they work
- to learn ***vocabulary related to computer components*** and talk about them efficiently (*what is their function, how they work, etc.)*

How would you define the term ‘*computer*’?

Can you think of different types of computers?

&

What is the difference between them?



Match the terms below with the appropriate picture

mainframe computer ____

microcomputer ____

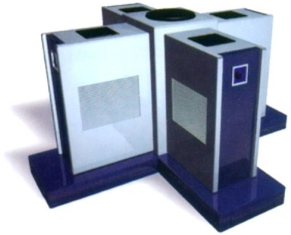
supercomputer ____

handheld device ____

workstation ____

portable computer ____

A



B

C

D

E

F

Types of computers

Read the text available here quickly and complete the table below with your notes from the text.

	Supercomputers	Mainframes	Minicomputers	Workstations	Microcomputers
Power					
Size					
Processing capacity					
Use					

Students, draw anywhere on this slide!

Language work: Comparison

Study the comparison of the three types of computers below:

	Mainframes	Minicomputers	Microcomputers
Size	+++	++	+
Power	+++	++	+
Cost	+++	++	+

With short adjectives (big, small, fast) (*less than 2 syllables*) we add *-er* and *-est* (**faster, the fastest**)

‼ when an adjective ends in *-y* sometimes you need to change the -y to -i (i.e. happy - happier)

With longer adjectives (*powerful, expensive*), we use *more / less* and *the most / the least* before the adjective (*more powerful, the most powerful).*

We compare things using adjectives in two ways:

1

We can compare one type of computer with another.

*Minicomputers are **bigger than** microcomputers.*
*Mainframes are **more expensive than** microcomputers.*

For negative comparisons we can say:
*Microcomputers are **not as big as** minicomputers.*
*Microcomputers are **not as powerful as** mainframes.*

2

We can compare mainframes to all other types of computer.

*Mainframes are **the biggest** computers.*
*Mainframes are **the most powerful** computers.*
*Mainframes are **the most expensive** computers.*

Students, follow the instructions on the slide

Language work: Comparison

Choose the correct adjective. Then fill the gaps with the correct form of the adjective.

light / heavy

Laptops are _____ than desktop computers, but _____ than netbooks.

large/small

The supercomputer is the _____ type of computer. A minicomputer is _____ than a microcomputer.

common / good

Personal computers are _____ than mainframes but mainframes are _____ than personal computers.

powerful / expensive

Minicomputers are _____ than mainframes, but mainframes are _____ than personal computers at processing very large amounts of data.

fast / cheap

New computers are _____ and sometimes _____ than older machines.

powerful / expensive

Laptops are often _____ than PCs but they are not as _____.

Language work: Modifying Comparatives

Choose the correct adjective. The fill in the gaps with the correct form of the adjective.

Using qualifying expressions

Comparing two things: you can say "**a lot**", "**much**", "**a little**", "**slightly**", and "**far**" before "**more / less than**"

Saying how similar two things are: "**almost as ... as**", "**not quite as ... as**", "**(not) nearly as ... as**", "**nowhere near as ... as**", "**twice as ... as**" and "**half as ... as**"

There are different types of computer. (**large**) _____ and (**powerful**) _____ are mainframe computers. Minicomputers are (**small**) _____ than mainframes but are still very powerful. Microcomputers are small enough to sit on a desk. They are the (**common**) _____ type of computer. They are usually (**powerful**) _____ minicomputers.

Portable computers are (**small**) _____ than desktops. The (**large**) _____ portable is a laptop. (**Small**) _____ portables, about the size of a piece of writing paper, are called notebook computers. Subnotebooks are (**small**) _____ than notebooks. You can hold the (**small**) _____ computers in one hand. They are called handheld computers or palmtop computers.

Students, draw anywhere on this slide!

Language work: Comparison

Error correction. Some of the sentences below contain an error. Find the error and write the corrected form on the line below.

1. Using computers is much more easier now than it used to be in the past. _____
2. Mainframes are nowhere near as powerful as supercomputers. _____
3. PC computers are far more slower than mainframe computers. _____
4. Workstations are not nearly as much popular as microcomputers. _____
5. Your company has less computers than ours. _____
6. I am the happyest when I am in front of my computer. _____
7. Computer architecture is a lot more interesting than I thought. _____
8. Microcomputers are slowest computers available. _____

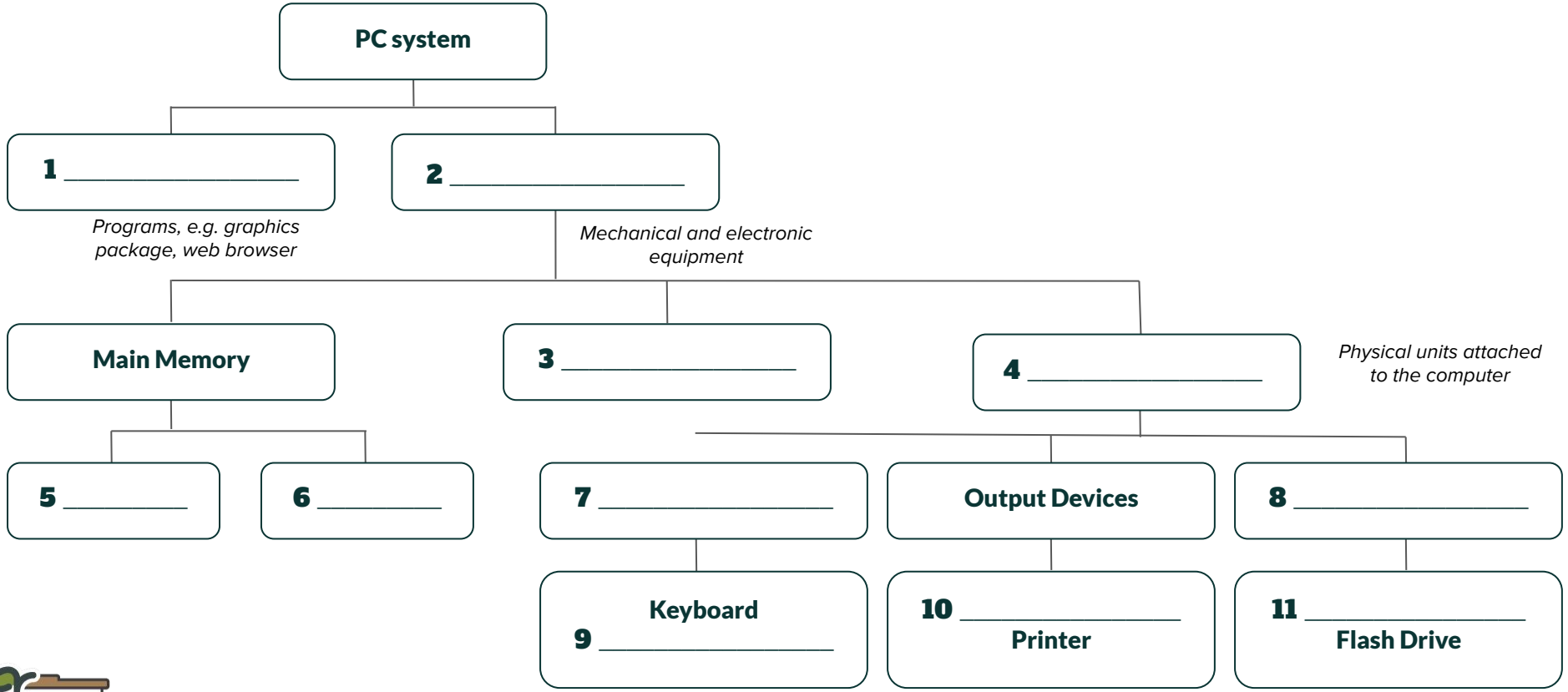
What are the basic components of a computer system and how do they work?

Students, write your response!

Basic Components of a PC

Look at the diagram below and complete it with the missing information.

Audio Included



Students, draw anywhere on this slide!

Teamwork

Work in 3 groups.

1

Each team will receive a short text in which they will find information about different computer parts along with an explanation of how they work.

2

Working in teams, extract information from the text and create a visual representation (a mind-map) of the most important information from the text.

3

Once each group has completed the task, we will come back to the main session and each group will have to present their work.

Students, follow the instructions on the slide

Vocabulary extension

Match the following terms to their definitions.

1	microprocessor chip	_____
2	registers	_____
3	accumulators	_____
4	control bus	_____
5	address bus	_____
6	data bus	_____
7	clock	_____
8	RAM	_____
9	ROM	_____

a. Used to send address details between the memory and the address register

b. Consists of an arithmetic-logic unit, one or more working registers to store the data being processed, and accumulators for storing the results of calculations

c. A group of signal lines used to transmit data in parallel form from one element of a computer to another

d. Groups of bistable devices used to store information in a computer system for high-speed access.

e. An electronic circuit, usually a quartz crystal that generates electronic pulses at fixed time intervals to control the timing of all operations in the processor

f. Used for storing part of the operating system and application software known as ‘firmware’; can only be read: cannot be written or altered in any way.

g. Used to store numeric data during processing

h. A group of signal lines dedicated to the passing of control signals

i. Used for the temporary storage of application programs and data; can be written to and read from

Vocabulary check

Based on the information you could hear / read, explain the differences between the terms below.

volatile *vs.* **non-volatile memory**

control unit *vs.* **arithmetic logic unit**

program counter *vs.* **instruction register**

ROM *vs.* **PROM**

read *vs.* **write operation**

access time *vs.* **cycle time**

primary *vs.* **secondary memory**

block *vs.* **page**

asynchronous *vs.* **synchronous protocol**

transfer time *vs.* **bandwidth**

That’s all for today! Thank you for your attention and see you all next week!

As always, feel free to rate today’s lesson and leave a message if you prefer:

You can write your feedback here, if you prefer: