Talking About Computer Specifications

Objective:
After completing this lesson you will be able to :
- identify technical specifications of computer
- define things
- describe an ideal computer

1. Technical specifications

Read the advertisement and translate the technical specifications into your own language.

HP pavilion Dv2

- 12.1-inch (1280×800) LED BrightView display
- ultra-portable features
- 1.6GHz Athlon Neo MV-40 processor
- Up to 4GB of memory
- 500GB hard disk drive
- 802.11n WiFi(optional)
- WWAN support
- Bluetooth
- HDMI-out
- Integrated webcam,mic.
- 3.5 to 4-hours of battery life
- 1.72 KG (starting)

In pairs, answer these question. If necessary, look at the Glossary.

1. What is the main function of a computer's processor ?
2. What unit of frequency is used to measure processor speed ?
3. What does RAM stand for ?

2. *What is inside a PC system ?*

Read the text on page 2 and then answer these question.

1. What are the main parts of the CPU?
2. What does ALU stand for? What does it do?
3. What is the function of the system clock?
4. How much is one gigahertz?
5. What type of memory is temporary?
6. What type of memory is permanent and includes instructions needed by the CPU?
7. How can RAM be increased?
8. What term is used to refer to the main printed circuit board ?
9. What is a bus ?
10. What is the benefit of having expansion slots?

Look at these extracts from the text. What do the words in bold refer to ?

1. **This** is built into a single chip. (line …)

2. …**which** executes program instructions and coordinates…(line …)

3. …**that** is being executed. (line …)

4. …performance of a computer is partly determined by the speed of **its** processor. (line …)

5. …the CPU looks for **it** on the hard disk…(line …)

6. Inside the computer to communicate with **each other**. (line …)

What is inside a PC system ?

Processing

The nerve centre of a PC is the **processor**, also called the **CPU**, or **central processing unit**. This is built into a single **chip** which executes program instructions and coordinates the activities that take place within the computer system. The chip itself is a small piece of silicon with a complex electrical circuit called an **integrated circuit**.

The processor consist of three main parts :

- The **control unit** examines the instructions in the user's program, interprets each instruction and causes the circuit and the rest of the components-monitor, disk drives, etc- to execute the functions specified.
- The **arithmetic logic** unit (ALU) performs mathematical calculations (+,-,etc.) and logical operations (AND,OR, NOT).

- The **registers** are high-speed units of memory used to store and control data. One of the registers (the program counter, or PC) keeps track of the next instruction to be performed in the main memory. The other (the instruction register, or IR) holds the instruction that is being executed (see Fig. 1 on page 13)

The power and performance of a computer is partly determined by the speed of its processor. A **system clock** sends out signals at fixed intervals to measure and synchronize the flow of data. **Clock speed** is measured in **gigahertz (GHz)**. For example, a CPU running at 4GHz (four thousand million hertz, or cycles, per second) will enable your PC to handle the most demanding applications.

The Intel Core 2 Duo processor, other chip manufacturers are AMD and Motorola

RAM and ROM
The programs and data which pass through the processor must be loaded into the main memory in order to be processed. Therefore, when the user runs a program, the CPU looks for it on the hard disk and transfer a copy into the **RAM** chips. RAM (**random access memory**) is volatile – that is, its information is lost when the computer is turned off. However, **ROM (read only memory)** is non-volatile, containing instructions and routines for the basic operations of the CPU. The **BIOS (basic input/ output system)** uses ROM to control communication with peripherals.

RAM capacity can be expanded by adding extra chip, usually contained in small circuit boards called dual in-line memory modules **(DIMMs)**

Busses and cards

The main circuit board inside your system is called the **motherboard** and contains the processor, the memory chips, expansions slots, and controllers for peripherals, connected by **buses** – electrical channels which allow devices inside the computer to communicate with each other. For example, the front side bus carries all data that passes from the CPU to other devices.

The size of a bus, called **bus width**, determines how much data can be transmitted. It can be compared to the number of lanes on a motorway – the larger the width, the more data can travel along the bus. For example, a 64-bit bus can transmit 64bits of data.

Expansions slots allow users to install **expansion cards**, adding features, like sounds, m emory and network capabilitie s.
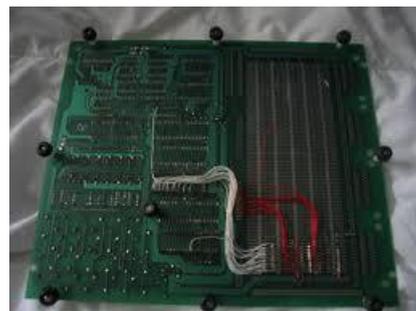
3. Language work :
   Defining relative clause

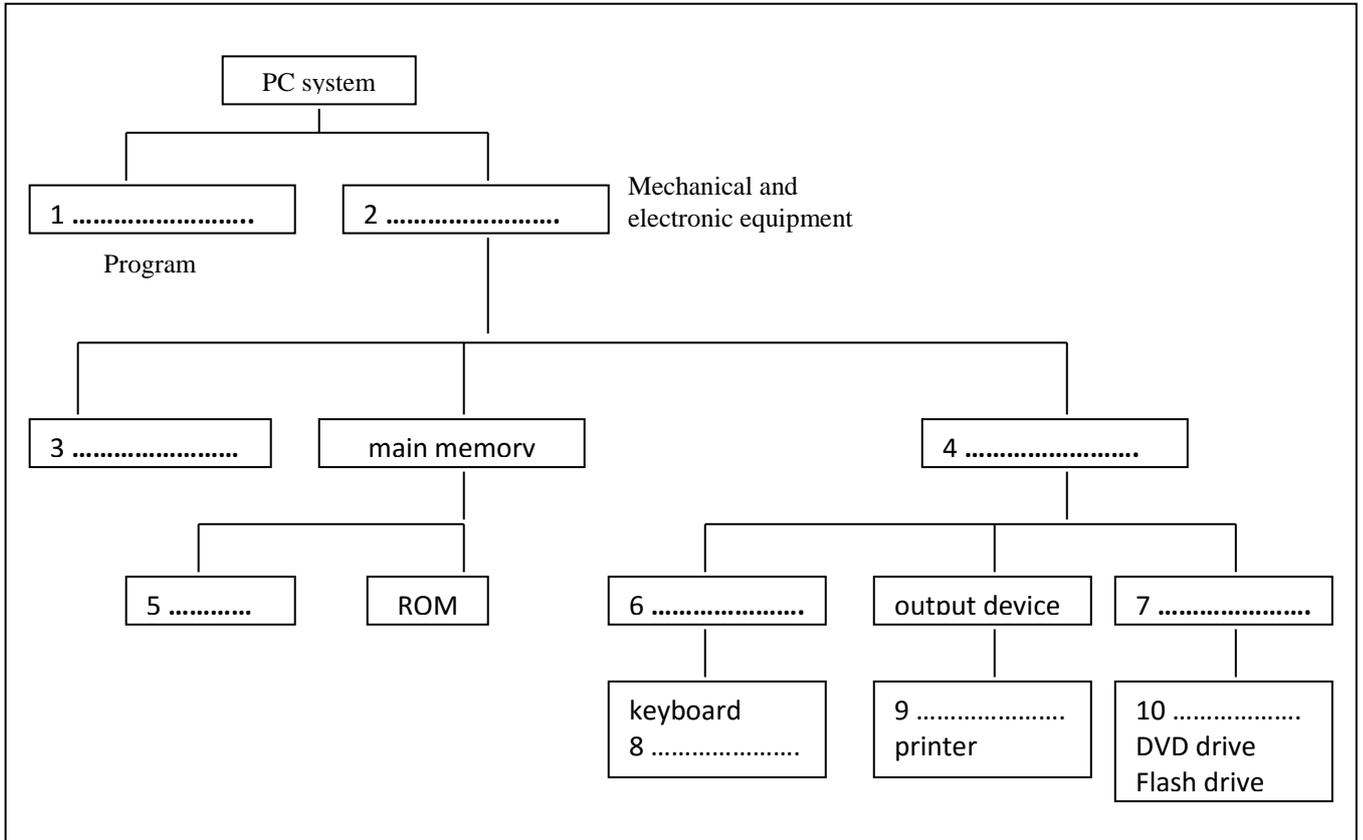|	
Look at the HELP box and then complete the sentences below with suitable relative pronouns. Give alternative options if possible. Put brackets round the relative pronouns you can leave out. 1. That's the computer……………………. I'd like to buy. 2. Core 2 Duo is a new Intel processor ………………….contains about 291 million transistors. 3. A webmaster is a person ……………. design, develops and maintains a website. 4. A bus is an electronic pathway …… ……………………carries signal between computer devices. 5. Here's the DVD………………………you lent me !. 6. Last night I met someone ………… ………………….works for GM as a software engineer.	HELP box **Defining relative clauses** - We can define people or things with a defining (restrictive) relative clause. We use the relative pronoun **who** to refer to a person; we can also use **that**. *A blogger is a person who/that keeps a web log (blog) or publishes an online diary.* - We use the relative pronoun **which** (or **that**) to refer a thing, not a person. *This is built into a single chip **which/that** executes program instruction and coordinates the activities that take place within the computer system.* - Relative pronouns can be left out when they are the object of the relative clause *The main circuit board (**which/that**) you have inside your system is called the motherboard…*

4. A PC system

A. Complete this diagram of a PC system. Look at Units 1, 2 and 3 to help you.

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                        ┌─────────────────┐
                        │   PC system     │
                        └─────────────────┘
              ┌──────────────────┴──────────────────┐
      ┌───────────────┐                    ┌───────────────────┐  Mechanical and
      │ 1 ............ │                    │ 2 ............     │  electronic equipment
      └───────────────┘                    └───────────────────┘
          Program                                   │
                        ┌─────────────────┬─────────┴────────────────────┐
                ┌───────────────┐  ┌───────────────┐           ┌───────────────────┐
                │ 3 ........... │  │  main memory  │           │ 4 ............     │
                └───────────────┘  └───────────────┘           └───────────────────┘
                                    ┌──────┴──────┐      ┌───────────┬──────┴────────┐
                             ┌──────────┐  ┌─────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
                             │ 5 ...... │  │  ROM    │ │ 6 ...... │ │ output   │ │ 7 ...... │
                             └──────────┘  └─────────┘ │          │ │ device   │ │          │
                                                       └──────────┘ └──────────┘ └──────────┘
                                                            │            │            │
                                                       ┌──────────┐ ┌──────────┐ ┌──────────────┐
                                                       │ keyboard │ │ 9 ...... │ │ 10 .........  │
                                                       │ 8 ...... │ │ printer  │ │ DVD drive    │
                                                       └──────────┘ └──────────┘ │ Flash drive  │
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C. In pairs, compare your answer.

D. Listen to a teacher explaining the diagram to her class and check your answers.

Your ideal computer system

A. Make notes about the features of the computer that you would most like to have. Think about the features in the box.

CPU Speed	Optical disc drives	Wireless connectivity	Minimum/maximum RAM
Monitor	Ports and card memory slots	Hard disk	software

B. In pairs, describe your ideal computer system. Give reasons for your choices.

Useful language

It's got……………………….

It's very fast. It runs at……………

*The standard RAM memory is………………..and it's expandable
……………….*

The hard disk can hold…………………...

I need a large, flat LCD screen because…………………………

As for the Internet