

INSIDE THE COMPUTER

Matthew Boulton College

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PC's and Macs have subtle differences. Macs have always had *plug and play* technology, it is only recently that PC's have used this facility. Basically if a new hardware device like a printer or scanner is connected to the computer, it recognises this device and seeks the software 'drivers' to be installed. This process is achieved automatically by various screen prompts. The printer or scanner is ready to use. Prior to *plug and play*, software was installed and then complicated process of configuration took place, to get the device to operate. This involved a degree of skill to search for the correct areas on the computer to check and adjust.

Macs have always had *built-in speakers* inside the case, so could always play audio CD's. No external speakers are required, but may be used to enhance the sound. With PC's external speakers need to be purchased to play audio.

Most Macs have *built-in networking* cards. Creating a simple network is just a case of connecting cables to the computer. PC's do not have this facility as standard network cards need to be purchased and installed.

Below is a list of items found inside a computer:

Case

Originally the desktop shape was used to house the components. It has now been superseded by the tower model, where it can be placed on the floor.

Power Supply Unit

The case is normally provided with the power supply fitted. It is a sealed unit with a fan installed.

The Motherboard

The printed circuit board - known as the motherboard co-ordinates all the components within the system. When purchasing a motherboard considerations need to be made about which CPU is going to be fitted. Most support plug and play technology (PNP). Every device and component is attached or connected to the motherboard.

Central Processing Unit (CPU)

The CPU fits onto the motherboard and is the heart of the computer where all the processing of data takes place. On a PC a fan fits on top of the CPU to keep it cool whilst processing. All CPU's on Macs are Motorola and do not have fans! Examples of CPU's used on a PC are Intel Pentium, AMD, Cyrix and Celleron.

Ram Memory

When a computer is in use, all programs and data are temporarily stored in RAM (Random Access Memory). The moment the computer is switched-off the data in RAM is lost.

The more RAM installed, gives the computer the ability to run more than one program at once, also the program will run faster. RAM memory is referred to as:

- SIMM
- DIMM

SIMM (Single In-Line Memory Module)

Simms are always fitted in pairs. Therefore 32MB of RAM will have 2 x 16MB or 4 x 8MB SIMM's. SIMM modules are old technology and are not fitted in computers which are purchased today.

DIMM (Dual In-Line Memory Module)

DIMM's are fitted into a long 168 pin socket. It has 64 bit memory and can be fitted as a bank of one on the modern motherboard.

Graphics Card

Also referred to as *video card* or *display card*. The graphics card needs to be compatible with the motherboard and monitor. Some motherboards have graphic cards already built-in. Graphic cards can either fit into a PCI (Peripheral Component Interconnect) or AGP (Accelerated Graphics Port) slot. The monitor is connected to the graphics card via a 15 pin connector.

Sound Card

Some motherboards have sound cards built-in. Sound cards can either fit into a PCI or ISA (Industry Standard Architecture) slot. To use the sound card features on a PC - like playing music, external speakers need to be connected to the card.

Modems

Most modems are fitted inside the computer, but external modems can still be purchased. Modem cards can either fit into an ISA or PCI slot on the motherboard. Modems provide communication between a local and remote computers and most have the following features:

- Receive data at 56 kilobytes per second
- Send and receive faxes
- Use computers as a telephone answering machine
- Place and receive video phone calls

Hard Disk Drive

The hard disk drive is increasing in capacity at a rapid rate of knots. There are 2 types of hard disk drive available:

- IDE
- SCSI

IDE (Integrated Drive Electronics)

This is the most popular type of drive, it offers excellent performance at relatively low cost.

SCSI (Small Computer System Interface)

The second most popular hard disk used in PC's today is the SCSI. They are more expensive than IDE devices and tend to be used in high end machines.

Floppy Disk Drive

They have standardised on 3.5 inches, high density and store 1.44 MB of data.

CD-Rom**CD-RW****DVD Player****DVD-R**

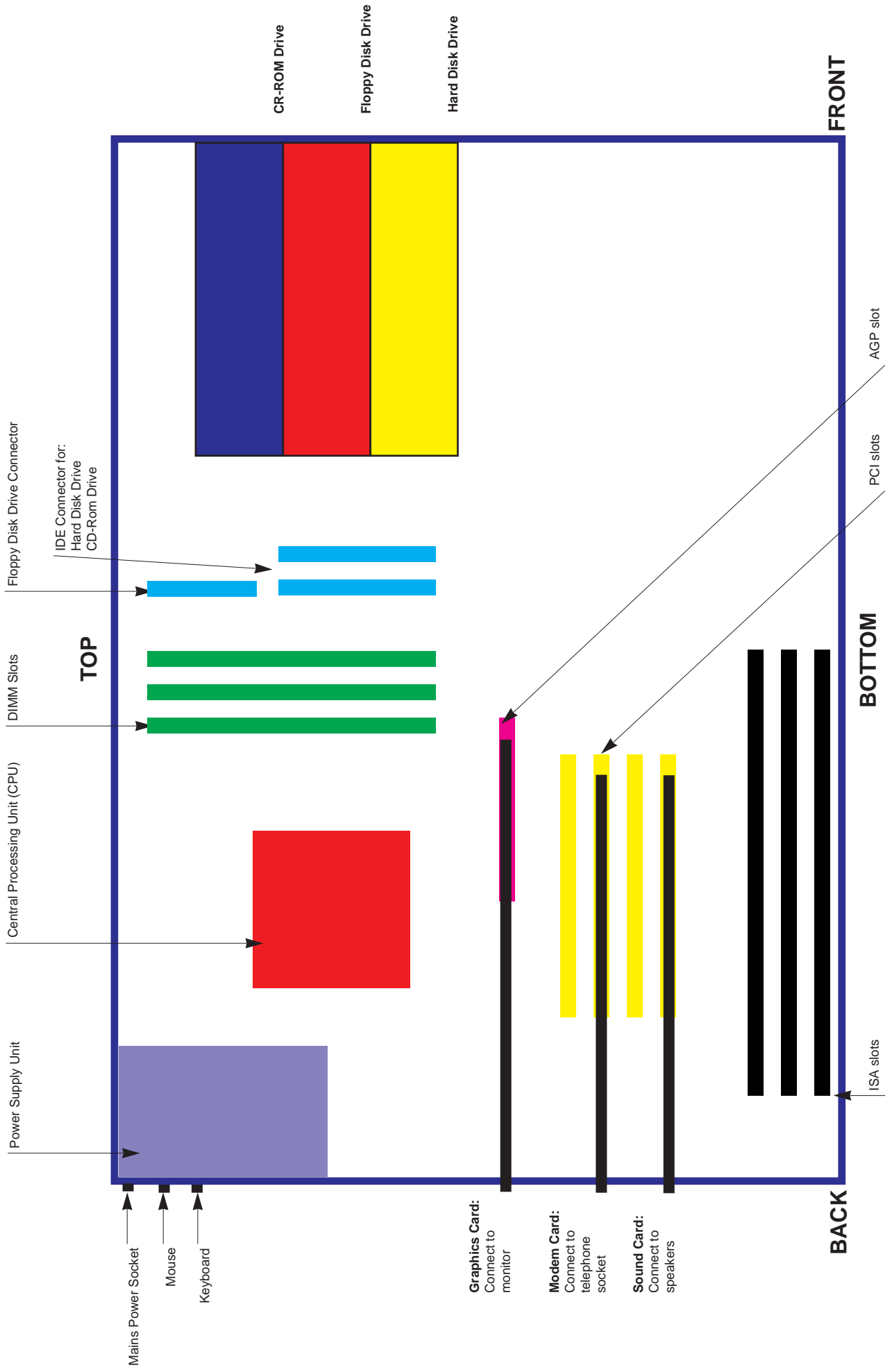
Most computers today come with a CD-Rom fitted as standard. This is because most software is on CD. CD-Rom can only read data from a CD. This can be in the form of data files or audio tracks.

CD-RW (CD Writers) are becoming popular because they can read data from a CD, but more importantly they can write data to CD-R and CD-RW.

With the advent of video being produced in DVD format , DVD players are being installed on computers.

DVD technology is still in its infancy but DVD-R (DVD Writers) are coming on the scene. DVD-R/CD-RW equipment is being fitted to computers which gives full copying of video and audio to CD and DVD media.

INSIDE A COMPUTER



QUESTIONS ON INSIDE THE COMPUTER

- (1) Name a device which Apple Macintoshes have built into the computer, but has only recently been available on a PC?
- (2) When purchasing a motherboard what other component needs to be considered?
- (3) Give a feature of a Motorola CPU which is fitted on an Apple Macintoshes?
- (4) Name a feature of RAM memory?
- (5) Name the RAM memory used on a modern computer?
- (6) What needs to be installed in a PCI or AGP slot in order for the monitor to function?
- (7) What can be connected to a sound card?
- (8) Name another use of a modem other than for the internet?
- (9) Name the two types of hard disk drive?
- (10) How much data can be stored on a floppy disk?