

# First steps – getting to know a computer

## Absolute minimum

1. There are a number of basic computer systems available today:
  - a) Desktop systems ('tower', monitor and keyboard)
  - b) Laptops (all-in-one, portable but not in-your-pocket convenience)
  - c) Netbooks, tablets, etc. (pocket-sized – sometimes a very large pocket!)
2. You interface with your computer hardware via a piece of software called an **operating system (OS)**. The operating system of your computer is probably a version of Microsoft's Windows or Apple's OS X depending of when and what you purchased. The OS includes a **desktop** application that allows you to control the machine. Other Operating Systems exist – some much more powerful than Microsoft's or Apple's.
3. You use specific software programs (note the spelling!) to perform specific tasks, such as writing letters or editing digital photographs. These are known as **applications** (or apps for short).
4. The brains and engine of your system is the motherboard which contains the **central processing unit (CPU)** also known as a **microprocessor** and also links to other components including:
  - a) **hard drive** for long-term storage of information.
  - b) **memory** (Random access memory or RAM) used for temporary or working storage. This is measured in **bytes** which is roughly equivalent to a computer letter.
  - c) **graphics card** to drive your monitor, speeding up image handling (may not be provided with basic machines, this facility will then be managed more slowly by the CPU, etc.)
  - d) **connections** for adding or linking to further components such as printers, CD/DVD drives, scanners, cameras, external hard drives, etc.
6. Data is temporarily stored in your systems **RAM** memory – it's 'working' memory – but is stored permanently (when your machine is turned off) on some sort of disc system such as your hard drive. Hard drives can be added to your machine either internally or externally. An external hard drive is an economical way to store information and is also a useful – and economical - security **backup** extension.
7. When purchasing a machine, not only consider whether you want a portable (laptop, netbook, etc) or desktop version but also look at the **specification**. In particular, look at the specification of the (micro) processor – a **dual or quad** (or more!) **core** means that effectively, the processor is made up of two, four or more working alongside each other, so dramatically increasing the speed of your machine. The speed of the processor (measured in gigahertz GHz) is also an important speed factor, aim for at least 2GHz and 4GB (gigabytes) of memory (RAM).

### **Some notes on computer – and science – number shorthand**

*You will probably remember from school that kilo- is used to indicate a thousand (as in kilogram and kilometre). This is abbreviated to just 'k' and scientifically as  $10^3$ .*

*Other multiples and their abbreviations are:*

|                  |                 |           |      |   |
|------------------|-----------------|-----------|------|---|
| Millions         | 000,000         | $10^6$    | mega | M |
| Billions         | 000,000,000     | $10^9$    | giga | G |
| Million millions | 000,000,000,000 | $10^{12}$ | tera | T |