

**A** You are probably familiar with the traditional branches of science e.g. chemistry, physics, botany and zoology. But what about these newer fields?

**genetic engineering:** the manipulation of genetic material (DNA) of living things to alter hereditary traits

**ergonomics:** the study of the design of physical working spaces and how people interact with them

**molecular biology:** the study of the structure and function of the organic molecules associated with living organisms

**cybernetics:** the study of the way information is moved and controlled by the brain or by machinery

**information technology:** the study of technology related to the transfer of information (computers, digital electronics, telecommunications)

**bioclimatology:** the study of how climate affects living things

**geopolitics:** the study of the way geographical factors help to explain the basis of the power of nation states

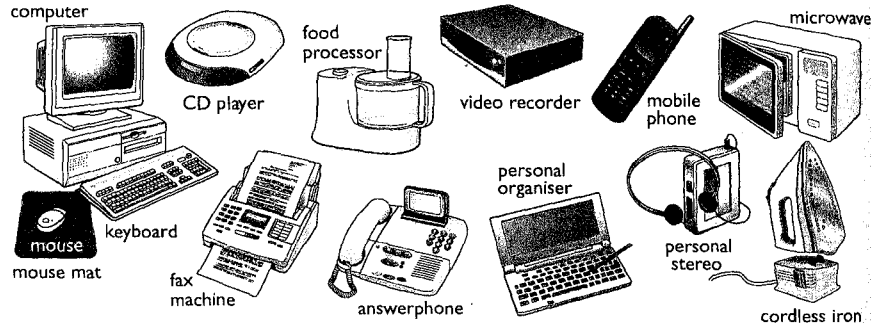
**nuclear engineering:** the study of the way nuclear power can be made useful

**cryogenics:** the study of physical systems at temperatures less than 183°C

**astrophysics:** the application of physical laws and theories to stars and galaxies

**voice technology:** technology which enables machines to interpret speech

**B** Here are some of the modern inventions which we are now becoming quite used to.



**C** The verbs in the sentences below are all useful in scientific contexts.

He **experimented** with a number of different materials before **finding** the right one.

The technician **pressed** a button and lights started **flashing**.

When she **pulled** a lever, the wheel began to **rotate**.

The zoologist **dissected** the animal.

When they were **combined**, the two chemicals reacted violently with each other.

After **analysing** the problem, the physicist **concluded** that there was a flaw in his initial hypothesis.

James Watt **invented** the steam engine and Alexander Fleming, another Scot, **discovered** penicillin.

After **switching** on the computer, **insert** a floppy disk into the disk drive.

You must **patent** your invention as quickly as possible.

See Unit 58 for words relating to Computers and the Internet.

## Exercises

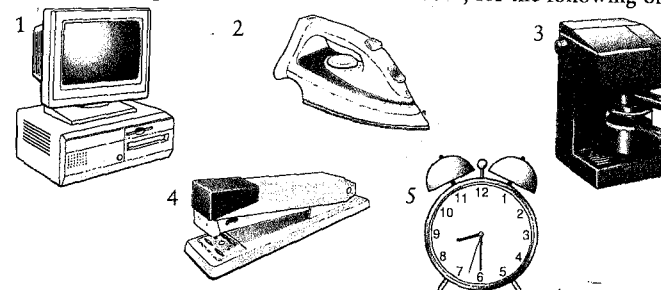
**57.1** Complete the following list with the name of the specialists in the particular fields.

science	scientist	science	scientist
chemistry	.....	information technology	.....
physics	.....	cybernetics	.....
zoology	.....	civil engineering	.....
genetics	.....	astrophysics	.....

**57.2** Below you have some of the amazing achievements of modern technology. Match the names on the left with the definitions on the right.

- |                  |  |
|------------------|--|
| 1 video recorder | a kind of sophisticated typewriter using a computer  |
| 2 photocopier    | a machine which records and plays back sound   |
| 3 fax machine    | a machine which records and plays back sound and pictures  |
| 4 tape recorder  | a camera which records moving pictures and sound   |
| 5 modem          | a machine for chopping up, slicing, mashing, blending, etc.  |
| 6 camcorder      | a machine which makes copies of documents  |
| 7 word processor | a machine which makes copies of documents and sends them down telephone lines to another place                   |
| 8 food processor | a piece of equipment allowing you to send information from one computer down telephone lines to another computer |

**57.3** Write descriptions like those in exercise 57.2, for the following objects.



**57.4** What are the nouns connected with the following verbs?

- |            |            |           |              |           |
|------------|------------|-----------|--------------|-----------|
| 1 discover | 3 rotate   | 5 patent  | 7 dissect    | 9 combine |
| 2 invent   | 4 conclude | 6 analyse | 8 experiment |           |

**57.5** Give each of the sciences in A opposite a number from 0 to 5 depending on whether it doesn't interest you at all (0) or interests you enormously (5). Similarly mark each of the inventions in B, 0 to 5, depending on how important they are to you in your life.

**Follow-up:** Increase your knowledge of scientific vocabulary by reading articles of general scientific interest in English language newspapers or magazines. If possible, get a textbook in English for schoolchildren studying a branch of science that you have studied. Choose a book where the science is relatively easy for you so that you can concentrate on the English used.

Nowadays computers are everywhere. Even people who don't own or operate computers are exposed to computer terminology. This unit explores some of the most common words and expressions associated with computers and the Internet.

## A

## Personal computers

Here are some words associated with personal computers.

**personal computer / PC / desktop computer:** a computer that fits on a desk, used by individuals at work or at home

**laptop (computer):** a lightweight portable computer that usually fits in a briefcase

**palmtop (computer):** one small enough to fit in your hand

**hardware:** computer equipment or machinery

**software:** programs that you put into a computer to make it run

**floppy (disk) / diskette:** a small plastic disk that stores (a limited amount of) information.

A floppy can be inserted into a computer and taken out.

**hard disk:** a device inside a computer that stores large amounts of information

**disk drive:** an apparatus that allows information to be read from a disk or stored

**modem:** a piece of equipment that sends information from one computer along telephone lines to another computer

**scanner:** machine for transferring pictures and texts into a computer

**to download:** to transfer data or software from a large computer to a smaller one

**RAM (random access memory / memory):** the memory available on a computer to store and use information temporarily, usually measured in megabytes

**spreadsheet (program):** a program or the grid you create with it to perform mathematical operations

**computer graphics:** pictures, images, and symbols that you can form on a computer

**word processing:** writing and storing printed text on a computer

**virus:** hidden instructions in a program designed to destroy information

## B

## The Internet

**The Internet / 'the net':** a network connecting millions of computer users worldwide. You can access information on the Internet or send and receive e-mail (electronic mail) from a computer, through a modem.

Here is a small sampling of other words and expressions associated with the Internet.

**World Wide Web / 'the Web':** a huge portion of the Internet containing linked documents, called pages

**to surf the net / the Web:** to navigate around the Internet, sometimes aimlessly

**website / home page:** a document on the Web giving information about a person or institution

**newsgroup:** a meeting place on the Internet for discussion of a particular topic

**chat room / chat forum:** a group of people who have the same interests who e-mail one another live as a group

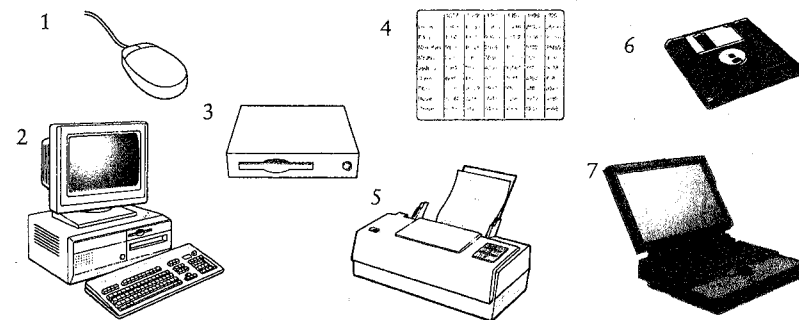
**FAQ: 'frequently asked questions',** a list of common questions and helpful answers

(See Unit 57 on technology, and Unit 16 on abbreviations.)

## Exercises

58.1 Match the words to the pictures below.

laptop      desktop computer      mouse      floppy disk drive  
floppy disk      printer      spreadsheet



58.2 Fill in the blanks with appropriate words from the opposite page.

- It's so easy to use a ..... when you want to send photographs to friends by e-mail. It's just like using a photocopier.
- I've lost a lot of data. I wonder if my computer has a .....
- I'm always impressed by people who carry their ..... on aeroplanes and work on them during the flight.
- Those ..... disks don't store nearly enough information. You really need to use your ..... disk for all the data you want to store.
- If you want some photos of the USA, you could just try ..... the Web. You'll be amazed how many you can find.
- I belong to a great ..... There are about ten people who are all interested in 1960s music. We e-mail one another almost every day, and can talk live to one another.
- I ..... a good program from the Internet the other day. Would you like a copy?
- Do you ever visit any ..... for pop stars or film stars? Some of them have photos and music too.

58.3 Here are some other words associated with computers and the Internet. Use them to complete the text. Use your dictionary if you need to. Remember to use the appropriate form of the verbs.

down    scan    click    attachment    crash

The other day I .....<sup>(1)</sup> some photos I'd taken, so that I could send them to a friend in Australia. However, as I was doing the last one, I just .....<sup>(2)</sup> the mouse and the program .....<sup>(3)</sup>. It was very annoying! Then, when I got it started again, I tried to send the photos by e-mail, as an .....<sup>(4)</sup> but the server was .....<sup>(5)</sup>, and so I just gave up, I was so frustrated!

58.4 Do you use a computer regularly? If so, what do you use it for? Do you have access to the Internet? If so, what do you use it for?