Hard copy. Paper printout of a program listing or other text or a graphics display.

Hardware. The electronic and mechanical parts of a computer system.

Heuristic. A trial and error method of getting closer to the solution of a problem. It does not guarantee to provide the solution, but it may speed up the process of finding one.

Hexadecimal notation. The number system that employs 16 digits represented by 0 to 9 and A, B, C, D, E and F. In each number the places or 'columns' have weighting factors of 1, 16, 16^2, etc. In this system the three-digit hexadecimal number 23A is equivalent to: $(2x16^2) + (3x16) + (10x1)$, which equals 570. Similarly, B4D represents $(11x16^2) + (4x16) + (13x1)$, which is 2893.

High-level language. A 'user-orientated' language like BASIC, which programmers can easily understand and learn. A device called a *Compiler* translates this into *Machine code*, which the computer can understand.

I

Icon. A visual representation on a TV screen of the action that a piece of software can carry out — for instance, a jar of money for a budgeting program.

IEEE-488. One of the standard *Interfaces* for connecting devices to a microcomputer.

Information. The meaning that is conveyed by, and can be extracted from, data.

Information technology. Describes new facilities for the processing and distribution of information, resulting from the convergence of technical developments in computing and communications that in turn have been made possible by advances in microelectronics.

Initialise. To attribute specific values to variables before beginning a computation.

Input. Data and information supplied to the computer from its keyboard, cassette unit, disk unit or other input source.

Instruction. A single directive to a computer to perform a particular operation. A collection or sequence of instructions form a program.

An IEEE-488 interface, designed for use with the BBC Microcomputer.

Integrated circuit. An electronic circuit that can consist of a large number of components and is formed in miniature on a silicon chip, typically a few millimetres square.

Intelligent peripheral. A device that is linked to a computer and has its own computing ability.

Interactive. Permitting a continuous exchange of communication between user and computer.

Interface. A circuit or socket that makes signals between two items of hardware compatible and allows their interconnection.

Interpreter. A piece of software that translates one *high-level language* statement at a time into *machine code*, for execution by the computer.

I/O. Input/Output. Equipment enabling communication of data to and from a computer. Also, the data involved in these communications.

Iteration. The repeated execution of a series of instructions until some condition is satisfied.

J

Joystick. A device consisting of a shaft that swivels on a base. When manipulated by its user it transmits signals to the computer, thus enabling it to control the movement of an object on the screen. Often used in computer games, the joystick sometimes has a 'fire' button.

K

k. In the metric system, this represents 1000 (10^3), as, for instance, in kilometre (km) which is 1000 metres. However, since computers use the binary system (with base 2), K (written as a capital letter in this context) is taken as 1024, which is 2 raised to the tenth power (2^{10}).

Kbyte. The unit of measure for memory size, being 1024 bytes (see *k*). Typical memory sizes for microcomputers are 16 Kbytes, 32 Kbytes and 64 Kbytes.

Keyboard. An arrangement of marked pads that the user presses to enter characters. The arrangement of keys usually follows the layout of a standard typewriter.

L

LCD. Liquid Crystal Display. A display used on digital watches and calculators — and now several portable microcomputers — that is flat and consumes little power.

Light pen. A device, shaped like a pen and sensitive to light, that, when moved over a display screen, allows the user to feed information to the computer. It works like a pointer and allows the computer to know which part of the screen is being pointed to.

Line number. The number at the beginning of each line in a BASIC program — used purely to identify that line.

Lisp. List Processor Language. A high-level language much used in the world of artificial intelligence research.

Logic. The electronic components that carry out the elementary logical operations and functions, from which every operation of a computer is ultimately built up.

Logo. A high-level computer language. It is highly regarded as an educational aid, since it is simple enough to be learned even by very young children.

Loop. A sequence of instructions in a program that is executed repeatedly by the computer until a certain condition is satisfied.

Low-level language. A programming language in which each instruction corresponds to the computer's *machine code* instruction.

LSI. Large Scale Integration. The technology of packing large numbers of electronic components and circuits on a single silicon chip. Future generations of computers will use VLSI technology (Very Large Scale Integration).

M

Machine code. The programming language that is directly understood by a microprocessor, since all its commands are represented by patterns of binary digits.

Mainframe. A large computer.

Man-machine interface. The 'area' where the user and computer are exchanging information. At present this usually involves the use of a screen and keyboard. In the future, these may be replaced by, for instance, an input device which recognises the user's spoken commands, and *Speech synthesis.*

Matrix. An arrangement of data in the form of a grid or a table, technically termed a two-dimensional, rectangular array.

Memory. The internal store of the computer where programs and data are kept. The memory is divided into sections, each of which can be identified and accessed individually.

Memory map. A table showing how the various areas of memory (e.g. memory available to the user, screen memory, operating system, and so on) have been allocated in any particular machine and software configuration. As a general rule, these areas are defined by the manufacturer/s of the combined system.

Menu. A set list of choices given by a program. When many options are available the user may first be presented with a main menu from which other menus can be selected. A well-designed menu system can make a complex program simple to use.

Microprocessor. A complex integrated circuit that can be programmed to perform different tasks.

Modem. A contraction of **Mo**dulator-**Dem**odulator. A device that allows a computer to transmit and receive data via a communications network, such as the telephone system.