

The background of the book cover is a detailed, colorful microchip circuit pattern. It features a complex network of yellow and green lines (representing conductive paths) on a dark purple and blue background. The pattern is dense and repetitive, typical of a printed circuit board (PCB) or a semiconductor chip.

**Oxford English for
Computing**

牛津计算机英语

[英] **Keith Boeckner**
P. Charles Brown

北京大学出版社
牛津大学出版社

Contents

Part 1 Text

Unit 1	4	Time sequence	
Personal computing	4		
The processor	8		
Language focus A	11	Unit 7	78
Contextual reference		Computer viruses	78
		Computer security	81
Unit 2	13	Language focus G	86
Portable computers	13	Listing	
Operating systems	20	Unit 8	88
Language focus B	24	Computers in the office	88
Word formation <i>prefixes</i>		Information systems	94
		Language focus H	97
Unit 3	28	The passive	
Online services	28	Unit 9	100
Data transmission	32	Computers in education	100
Language focus C	36	CALL	103
Word formation <i>suffixes</i>		Language focus I	108
		Giving examples	
Unit 4	39	Unit 10	110
Programming and languages	39	Computers in medicine	110
C language	44	Data storage and management	115
Language focus D	49	Language focus J	120
Organizing information		Explanations and definitions	
Unit 5	52	Unit 11	123
Computer software	52	Robotics	123
Comparing software packages	57	Robot characteristics	128
Language focus E	61	Language focus K	131
Making comparisons		Compound nouns	
Unit 6	66	Unit 12	134
Computer networks	66	Virtual reality	134
Network configurations	70	VR input devices	139
Language focus F	75		

Language focus L	142	Language focus N	164
Classifying		Making predictions	
Unit 13	145	Unit 15	167
Machine translation	145	Computer graphics	167
AI and expert systems	148	24-bit colour	172
Language focus M	152	Appendix 1	176
Cause and effect		Letter writing	
Unit 14	155	Appendix 2	197
Multimedia	155	Glossary	
Computer-to-video conversion	160		

Part 2 Translartion

Unit 1	214	Unit 9	222
Unit 2	214	Unit 10	223
Unit 3	216	Unit 11	225
Unit 4	217	Unit 12	226
Unit 5	218	Unit 13	227
Unit 6	219	Unit 14	228
Unit 7	220	Unit 15	230
Unit 8	221		

Part 3 Answer

Unit 1	234	Word formation <i>prefixes</i>	
Personal computing	234		
The processor	236	Unit 3	242
		Online services	242
Language focus A	237	Data transmission	244
Contextual reference			
		Language focus C	245
Unit 2	238	Word formation <i>suffixes</i>	
Portable computers	238		
Operating systems	240	Unit 4	246
		Programming and languages	246
Language focus B	241	C language	247

		Computers in medicine	272
Language focus D	249	Data storage and management	273
Organizing information			
Unit 5	250	Language focus J	275
Computer software	250	Explanations and definitions	
Comparing software packages	252	Unit 11	277
		Robotics	277
Language focus E	253	Robot characteristics	279
Making comparisons			
Unit 6	254	Language focus K	280
Computer networks	254	Compound nouns	
Network configurations	256	Unit 12	281
		Virtual reality	281
Language focus F	257	VR input devices	284
Time sequence			
Unit 7	259	Language focus L	284
Computer viruses	259	Classifying	
Computer security	260	Unit 13	285
		Machine translation	285
Language focus G	262	AI and expert systems	286
Listing			
Unit 8	263	Language focus M	288
Computers in the office	263	Cause and effect	
Information systems	265	Unit 14	290
		Multimedia	290
Language focus H	266	Computer-to-video conversion	292
The passive			
Unit 9	267	Language focus N	293
Computers in education	267	Making predictions	
CALL	268	Unit 15	294
		Computer graphics	294
Language focus I	271	24-bit colour	295
Giving examples			
Unit 10	272	Appendix 1	296
		Letter writing	

目 录

第 1 部分 课文

第 1 单元	4	时间顺序	
个人计算	4		
处理器	8	第 7 单元	78
		计算机病毒	78
语言重点 A	11	计算机安全	81
上下文参照		语言重点 G	86
		列举	
第 2 单元	13		
便携式计算机	13	第 8 单元	88
操作系统	20	办公室中的计算机	88
		信息系统	94
语言重点 B	24		
构词前缀		语言重点 H	97
		被动式	
第 3 单元	28		
联机帮助	28	第 9 单元	100
数据传输	32	教育中的计算机	100
		CALL	103
语言重点 C	36		
构词后缀		语言重点 I	108
		举例	
第 4 单元	39		
程序设计及语言	39	第 10 单元	110
C 语言	44	医疗中的计算机	110
		数据存储和管理	115
语言重点 D	49		
组织信息		语言重点 J	120
		解释和定义	
第 5 单元	52		
计算机软件	52	第 11 单元	123
比较软件包	57	机器人技术	123
		机器人特性	128
语言重点 E	61		
比较		语言重点 K	131
		复合名词	
第 6 单元	66		
计算机网络	66	第 12 单元	134
网络配置	70	虚拟现实	134
		虚拟现实输入设备	139
语言重点 F	75		

语言重点 L	142	语言重点 N	164
分类		预测	
第 13 单元	145	第 15 单元	167
机器翻译	145	计算机图形学	167
人工智能及专家系统	148	24 位彩色	172
语言重点 M	152	附录 1	176
因果关系		信函写作	
第 14 单元	155	附录 2	197
多媒体	155	词汇表	
计算机视频的转换	160		

第 2 部分 译文

第 1 单元	214	第 9 单元	222
第 2 单元	214	第 10 单元	223
第 3 单元	216	第 11 单元	225
第 4 单元	217	第 12 单元	226
第 5 单元	218	第 13 单元	227
第 6 单元	219	第 14 单元	228
第 7 单元	220	第 15 单元	230
第 8 单元	221		

第 3 部分 答案

第 1 单元	234	构词前缀	
个人计算	234		
处理器	236	第 3 单元	242
		联机帮助	242
语言重点 A	237	数据传输	244
上下文参照			
第 2 单元	238	语言重点 C	245
便携式计算机	238	构词后缀	
操作系统	240	第 4 单元	246
		程序设计及语言	246
语言重点 B	241	C 语言	247

		医疗中的计算机	272
		数据存储和管理	273
语言重点 D	249		
组织信息			
第 5 单元	250	语言重点 J	275
计算机软件	250	解释和定义	
比较软件包	252	第 11 单元	277
		机器人技术	277
语言重点 E	253	机器人特性	279
比较			
第 6 单元	254	语言重点 K	280
计算机网络	254	复合名词	
网络配置	256	第 12 单元	281
		虚拟现实	281
语言重点 F	257	虚拟现实输入设备	284
时间顺序			
第 7 单元	259	语言重点 L	284
计算机病毒	259	分类	
计算机安全	260	第 13 单元	285
		机器翻译	285
语言重点 G	262	人工智能及专家系统	286
列举			
第 8 单元	263	语言重点 M	288
办公室中的计算机	263	因果关系	
信息系统	265	第 14 单元	290
		多媒体	290
语言重点 H	266	计算机视频的转换	292
被动式			
第 9 单元	267	语言重点 N	293
教育中的计算机	267	预测	
CALL	268	第 15 单元	294
		计算机图形学	294
语言重点 I	271	24 位彩色	295
举例		附录 1	296
第 10 单元	272	信函写作	

Introduction

1 Readership

Oxford English for Computing is intended for:

- students of Computer Science in technical colleges and universities
- people working with computers who want to improve their knowledge of English:
- for study
- because they need to use English-language manuals, textbooks, and reference works
- because they plan to work in an English-speaking country

2 Objectives

Oxford English for Computing aims at all-round skills improvement:

- listening — to understand native and non-native professionals and students, talking about their work and study
— to understand experts talking informally about aspects of computing
- speaking — to communicate about computing topics
- reading — to understand a wide variety of text including diagrams, tables, and advertisements
— to compare different sources of information, written and spoken
- writing — to write descriptions and explanations of processes
— to write summaries of longer texts
— to write work-related letters

3 Authors

This book has two authors, both experienced teachers of English for computing. Care has been taken to ensure that the book is

methodologically sound and at the same time that the technical content is correct and up-to-date. Recent important developments in computing are included. P Charles Brown is co-author of *English for Computer Science*, OUP.

4 Textbook design

This textbook is designed to meet the requirements of learners studying Computer Science or working with computers. The authors recognize that learners who use this book want specialist knowledge of computing, and at the same time, exposure to the kind of texts used by their fellows in English-speaking countries. The materials used in this book therefore consist of a mixture of technical and non-technical texts. Tasks that accompany the more technical passages are designed in such a way that they can be used for self-study or as homework.

5 Organization

This textbook contains 15 units and 14 language focus sections designed to provide a minimum of 100 hours of work. Typically, each unit starts by examining some general area of computing or computer technology before focusing on a specific aspect or example of that general area.

The language focus sections have been adapted from *English for Computer Science, New Edition*, OUP, 1987. However, much of the original material has been updated, rewritten, or replaced.

Oxford English for Computing includes two appendices. Appendix 1, *Letter writing*, contains a complete guide to writing simple work-related letters. Appendix 2, *Glossary*

of technical terms and abbreviations, consists of brief definitions of all important technical terms in this book together with abbreviations commonly used in computing.

6 Sections

Start up

This section contains starter activities. It is intended to start students thinking about the topic of the unit and to encourage them to share both relevant language and knowledge of the topic.

Reading

All units contain at least two reading passages. The first reading passage is always general in nature. The second reading passage is usually more specific and/or technical and can be used for individual study. The activities which accompany passages are designed to improve both extensive reading skills (more speed, less attention to detail) and intensive reading skills (less speed, more attention to detail). Because the texts are authentic, some difficult but non-essential words are glossed at the end of specific passages.

The following reading passages are recorded on the cassette:

- Unit 1, page 6
- Unit 5, page 52
- Unit 6, page 67
- Unit 8, page 95
- Unit 11, page 125
- Unit 12, page 134
- Unit 13, page 146
- Unit 14, page 157
- Unit 15, page 170

Listening

Each unit has a listening section. Many of the dialogues are based on actual transcripts, though some have been simplified. The tape should be played as often as is necessary for

the learners to complete a particular task. In the case of weaker learners, transcripts provided at the end of the book may be referred to.

Speaking

These activities are for fluency practice, not accuracy. The real importance of these activities lies in the communicative process. Often students will not understand each other at first. It is important that they develop strategies for coping with not understanding and not being understood. For example, they should be encouraged to ask for clarification when they do not understand and to try rephrasing when they are not understood.

Writing

There are two kinds of writing section. One concentrates on reinforcing language. Writing tasks of this kind include descriptions, guided summaries, and reports. The other kind of writing section focuses on the translation into the mother tongue of selected paragraphs from the reading passages. Such paragraphs are chosen for grammatical or lexical content. Letter-writing skills are covered in Appendix 1 of the Text Part.

7 Spelling

As the texts in *Oxford English for Computing* are authentic and come from a variety of sources, some inconsistencies in spelling and punctuation will be found. The publishers have not attempted to standardize these, since students will be exposed to such inconsistencies in their professional lives. Certain words deserve special mention. In British texts on computing the American spelling *analog* is fast becoming standard, whereas in British texts on electronics *analogue* is almost always used. The spelling of *disk/disc* varies widely. The usual forms are: *compact disc*; *hard/floppy disk*, *disk drive*, etc.

Part 1 Text

第一部分 课文

1

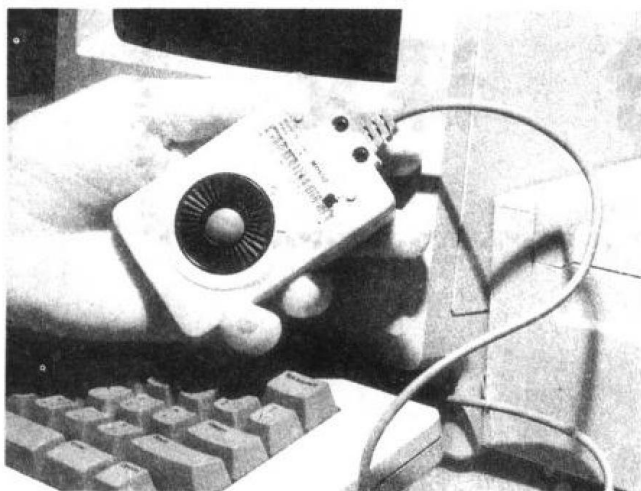
Personal computing

Start-up

Task 1

Name these devices. What are they used for?

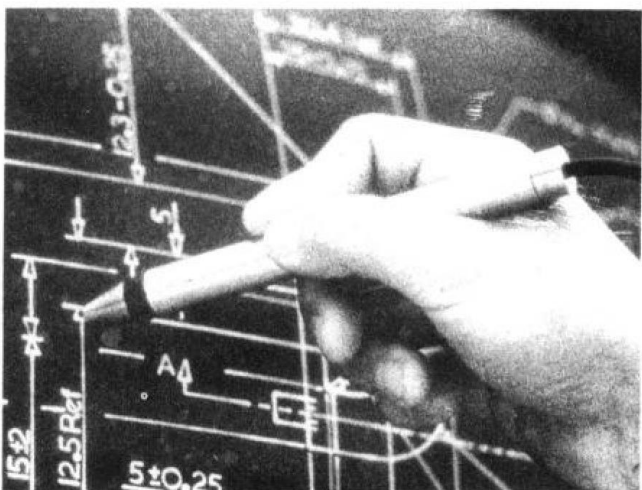
a



c



b



d



Listening

Task 2



You will hear two interviews between a market researcher and visitors to a computer exhibition. As you listen, fill in the missing information in the table opposite.

	Interview 1	Interview 2
Name:		
Occupation:		
Type of PC used:		
Reasons for choice: 1		
2		
3		

Task 3



Read this extract from Interview 2 and fill in the gaps. To help you, the first letter of each missing word is given.

INTERVIEWER: Do you own a PC?

ENRIQUE: Yes, I have an Apple Macintosh.

INTERVIEWER: Why did you c_____¹ a Mac as opposed to an IBM or an IBM c_____²?

ENRIQUE: I think Macs are e_____³ to use than IBM PCs. I use the m_____⁴ feature a lot, which is s_____⁵ on all Macs. Then there's the graphical user interface and the windows.

INTERVIEWER: Graphical user interface? Could you explain that?

ENRIQUE: Well, put simply, it means that you click on i_____⁶ instead of typing in c_____⁷.

INTERVIEWER: I see. You mentioned windows. Doesn't IBM also use windows?

ENRIQUE: Yes, but I think their windows are harder to s_____⁸ u_____⁹. In any case, I'm u_____¹⁰ t_____¹¹ the Mac.

Now listen again to the interview and check your answers.

Reading

Task 4

Before reading the text on the following page, match each word with the correct definition:

- | | |
|--------------------|---|
| 1 mainframe | a the set of software that controls a computer system |
| 2 mouse | b a very small piece of silicon carrying a complex electrical circuit |
| 3 icon | c a big computer system used for large-scale operations |
| 4 operating system | d the physical portion of a computer system |
| 5 software | e a device moved by hand to indicate position on the screen |
| 6 hardware | f a visual symbol used in a menu instead of natural language |
| 7 microchip | g data, programs, etc., not forming part of a computer, but used when operating it. |

Task 5

Now read the text and decide on a suitable title for it.

In 1952, a major computing company took a decision to get out of the business of making mainframe computers. They believed that there was only a market for four mainframes in the whole world. That company was IBM. The following year they reversed their decision.

In 1980, IBM decided that there was a market for 250,000 PCs, so they set up a special team to develop the first IBM PC. It went on sale in 1981 and set a world-wide standard for IBM-compatibility which, over the next ten years, was only seriously challenged by one other company, Apple Computers. Since then, over seventy million PCs made by IBM and other manufacturers have been sold. Over this period, PCs have become commodity items. Since IBM made the design non-proprietary, anyone can make them.

The history of the multi-billion dollar PC industry has been one of mistakes. Xerox Corporation funded the initial research on personal computers in their Palo Alto laboratory in California. However, the company failed to capitalize on this work, and the ideas that they put together went into the operating system developed for Apple's computers. This was a graphical interface: using a mouse, the user clicks on icons which represent the function to be performed.

The first IBM PC was developed using existing available electrical components. With IBM's badge on the box it became the standard machine for large corporations to purchase. When IBM were looking for an operating system, they went initially to Digital Research, who were market leaders in command-based operating systems (these are operating systems in which the users type in commands to perform a function). When the collaboration between IBM and Digital Research failed, IBM turned to Bill Gates, then

25 years old, to write their operating system.

Bill Gates founded Microsoft on the basis of the development of MS/DOS, the initial operating system for the IBM PC. Digital Research have continued to develop their operating system, DR/DOS, and it is considered by many people to be a better product than Microsoft's. However, without an endorsement from IBM, it has become a minor player in the market. Novell, the leaders in PC networking, now own Digital Research, so things may change.

The original IBM PC had a minimum of 16K of memory, but this could be upgraded to 512K if necessary, and ran with a processor speed of 4.77MHz. Ten years later, in 1991, IBM were making PCs with 16Mb of memory, expandable to 64Mb, running with a processor speed of 33MHz. The cost of buying the hardware has come down considerably as the machines have become commodity items. Large companies are considering running major applications on PCs, something which, ten years ago, no one would have believed possible of a PC. In contrast, many computers in people's homes are just used to play computer games.

The widespread availability of computers has in all probability changed the world for ever. The microchip technology which made the PC possible has put chips not only into computers, but also into washing-machines and cars. Some books may never be published in paper form, but may only be made available as part of public databases. Networks of computers are already being used to make information available on a world-wide scale.

► Vocabulary

commodity items (l. 23) – items which can be produced and traded freely
non-proprietary (l. 24) – not belonging to any single company
capitalize on (l. 33) – profit from, turn to one's advantage

Task 6

When you read the text to decide on a title, which of the following did you do?

Did you:

- ☐ read the text slowly and try to understand every word?
- ☐ read quickly and try to understand the main theme?
- ☐ underline or mark sentences that you thought were important?
- ☐ make notes about important points?

Which of these reading strategies do you think is most appropriate for this kind of task? Which do you think is least appropriate?

Task 7

Answer these questions about the text.

- 1 How many mainframes did IBM think it was possible to sell in 1952?
- 2 How many PCs have now been sold?
- 3 Who paid for the initial research into PCs?
- 4 Which company later used the results of this research to develop their operating system?
- 5 What are command-based operating systems?
- 6 DR/DOS is an acronym. What does it stand for?
- 7 Since the invention of the IBM PC, many of its features have been improved. Which of the following features does the text *not* mention in this respect?
 - a memory
 - b speed
 - c size
 - d cost
- 8 Give three examples from the text of how the availability of computers has 'in all probability changed the world for ever'.

Task 8

Using the line references given, look back in the text and find words that have a similar meaning to:

- 1 international (lines 10–15)
- 2 contested (lines 15–20)
- 3 errors (lines 25–30)
- 4 paid for (lines 25–30)
- 5 buy (lines 45–50)
- 6 first (lines 60–65)
- 7 recommendation (lines 65–70)
- 8 improved (lines 75–80)

Writing

Task 9

Translate the sixth paragraph (starting 'The original IBM PC...') into your own language. Look carefully at the tenses before you start.

Speaking

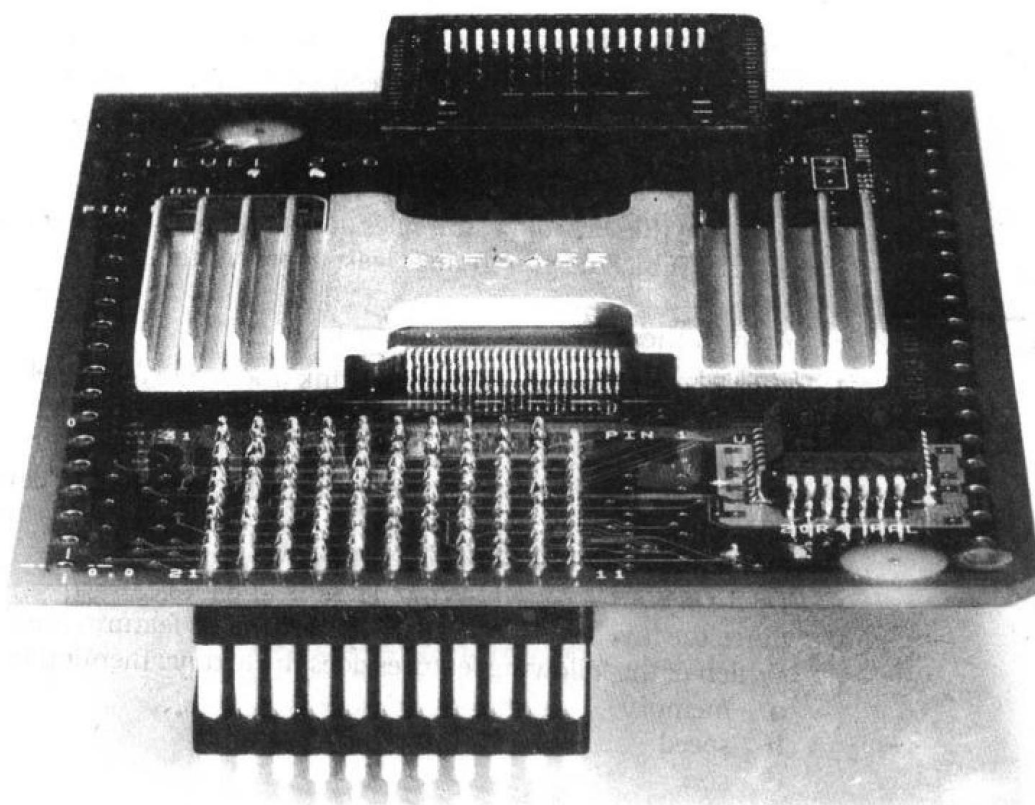
Task 10

The article states that 'many computers in people's homes are just used to play computer games'.

Discuss the following questions:

- 1 In what other ways are computers used at home, or outside work?
- 2 If you already have a PC, how do you use it? (If not, how would you use one?)

The processor



Reading

Task 11

Read this passage about the structure of the processor and fill in the gaps using the words below.

Structure of the processor

The processor consists of a ¹ _____, which is a circuit board on which are mounted ² _____ chips, memory chips, and other components linked together by ³ _____ lines or channels in the form of control, address, and data ⁴ _____. In addition, a processor has ⁵ _____, which are electronic circuits providing specialized functions such as graphics, or which connect a system board to ⁶ _____. The system board also consists of electronic devices, such as an electronic ⁷ _____ for controlling the speed of operation; ⁸ _____, which store numeric data during the course of processing; and various ⁹ _____, including sequence control register, address register, and function register.

adaptor boards
clock
system board

registers
conductive
accumulators

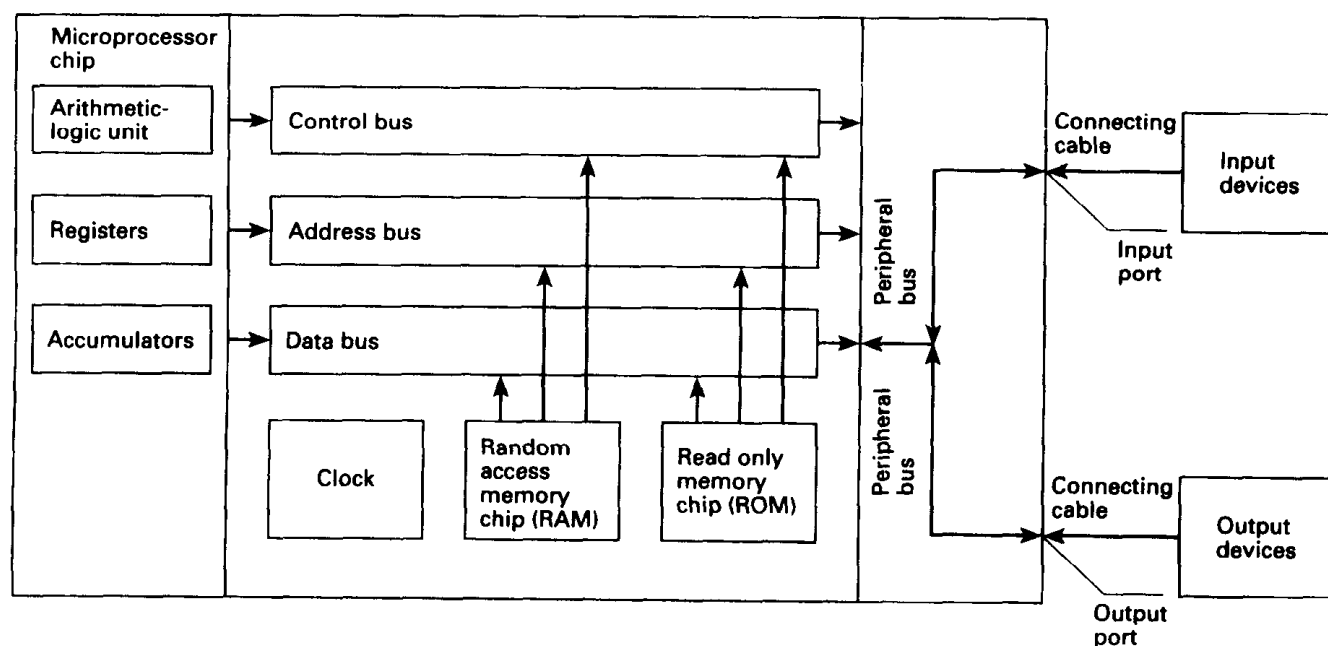
microprocessor
buses
input or output devices

Reading

Task 12

Use the information in the reading passage and the diagram to help you match the terms below with the appropriate explanation or definition.

- A processor consists of many different electronic circuits and devices for performing control functions, arithmetic and logic operations, and data transfers. Data may be transferred from backing storage to the internal memory or from the internal memory to the arithmetic unit by means of
- 5 conductive channels known as buses. The part of the processor which controls data transfers between the various input and output devices is called the control unit.



- | | |
|-----------------------|--|
| 1 microprocessor chip | a used to send address details between the memory and the address register |
| 2 registers | b consists of an arithmetic-logic unit, one or more working registers to store data being processed, and accumulators for storing the results of calculations |
| 3 accumulators | c a group of signal lines used to transmit data in parallel from one element of a computer to another |
| 4 control bus | d groups of bistable devices used to store information in a computer system for high-speed access |
| 5 address bus | e an electronic circuit, usually a quartz crystal, that generates electronic pulses at fixed time intervals to control the timing of all operations in the processor |
| 6 data bus | f used for storing part of the operating system and application software known as 'firmware'; can only be read; cannot be written to or altered in any way |
| 7 clock | g used to store numeric data during processing |
| 8 RAM | h a group of signal lines dedicated to the passing of control signals |
| 9 ROM | i used for the temporary storage of application programs and data; can be written to and read from |

Speaking

Task 13

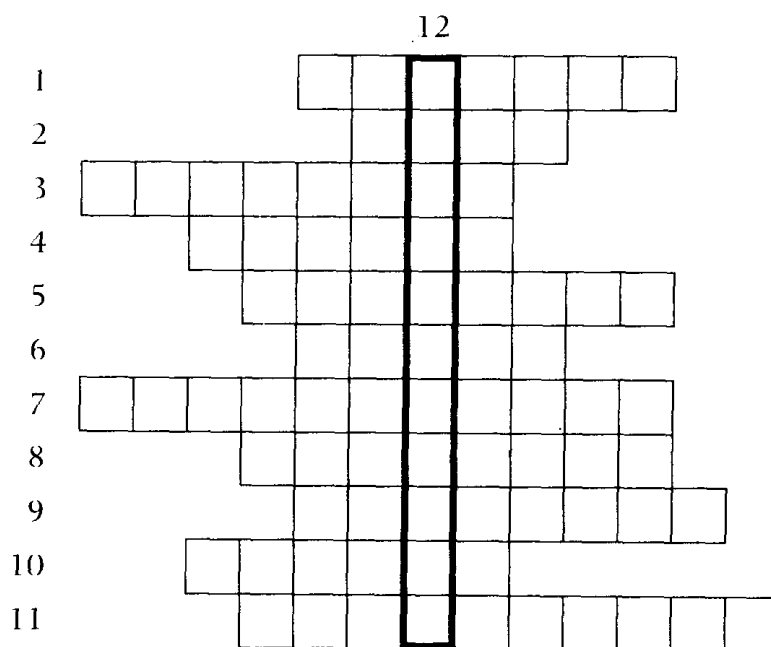
Work in pairs. Write down the list of terms (1–9) in Task 12 on a piece of paper. Without referring to your book, take turns to ask and answer questions about their functions.

- Useful expressions
What is/are ...?
What does/do ... do?

Word-play

Complete the puzzle and find the key word in 12 down.

Task 14



Across

- 1 A conductive line such as a data bus. (7)
- 2 A visual symbol used in a menu to represent a file or program. (4)
- 3 An input device used in computer games. (7)
- 4 An _____ device converts the electrical signals inside a computer into a form that can exist outside the computer. (6)
- 5 The name given to system software that is held in ROM. (8)
- 6 A device with one or more buttons used to point at locations on a computer screen. (5)
- 7 The part of the CPU that transmits co-ordinating control signals and commands to the computer. (7,4)
- 8 1,048,576 bytes. (8)
- 9 A large store of computerized data. (8)
- 10 The _____ system was first used commercially on the Apple Macintosh computer, but is now widely used on IBM machines. (7)
- 11 A signal route dedicated to sending information about locations within a computer. (7,3)

Down

- 12 A register containing the results of an operation performed by the arithmetic-logic unit. (11)