



UNIT ONE

The Computer

This unit focuses on the basic information about **computer hardware** — devices that get data into and out of the computer. In this unit, students are expected to know the nature of a computer; the basic components of a computer—input, output, processor, memory, and auxiliary storage; the nature of computer monitor, keyboard, printer, mouse, floppy disks and hard disks; and basic computer concepts such as input/output device, motherboard, microprocessor, internal memory, ROM, RAM, byte, CRT, resolution, pixel, cursor, etc. The translation skills that students will learn in this unit are conversion into adjectives, adverbs and conversion of sentence elements (from active to passive; from the subject to the object and *vice versa*, and so on). In addition, they will try to practice reading skills such as skimming, scanning, inferring, sentence and paragraph translation.

Warm-up

This is a lead-in exercise to familiarize students with the useful words used for computer hardware. For some students, it may be very easy, but for others it may not.

- ◆ Ask the students to fill in the table in pairs.
- ◆ Allow students to make their guesses if they don't know the answers.
- ◆ Give students a little time to tell each other information they know about the computer.
- ◆ Give students the answers.

Feedback:

Words and Expressions	Meanings Equivalent in Chinese
Input	输入
Output	输出
Processor	处理器
Memory/Internal memory	内存
Auxiliary storage	辅助存储器
Monitor	显示器
Keyboard	键盘
Printer	打印机
Mouse	鼠标
Floppy disk	软盘
Hard disk	硬盘

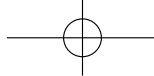
Task 1 Text A — Reading for General Comprehension

Exercise 1

This exercise is designed to check students' general comprehension of the text. It can be done in writing. Do not let students refer back to the text upon doing this exercise.

Feedback:

1. T



2. F The keyboard is the standard input device for a computer.
3. T
4. F The heart of a computer is the processor.
5. T
6. F Auxiliary storage is the same as disk storage.
7. F Data is transferred back and forth between auxiliary storage and memory.
8. T
9. T
10. T
11. F A byte consists of 8 binary digits.

Exercise 2

The purpose of this exercise is to further check the students' general comprehension ability. It can be done either orally or in writing. Do not ask students to refer back to the text while doing this exercise.

- ◆ *Ask the students to do the exercise quickly after reading the text.*
- ◆ *Check the answers with the students and ask them why they have made that choice.*
- ◆ *Tell students to find a clue from the title of the text.*

Feedback:

B

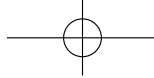
Task 2 Text A — Reading for Specific Information

Exercise 1

This exercise is designed to test students' ability to understand detailed information in the reading text. Students can refer to the text at this stage.

Feedback:

1. The logical structure of a computer
 - 1) A computer has 5 basic functions:
 - (1) data input
 - (2) output
 - (3) storage



- (4) arithmetic
(5) comparing
- 2) A computer has 5 basic components:
- (1) Input devices: The keyboard is the standard input device for the computer.
 - (2) Output devices: The monitor and printer are standard output devices for the computer.
 - (3) Processor contains the electronic circuitry to perform arithmetic operation, make comparisons, and provide overall control of the computer actions.
 - (4) Memory is also called internal memory, and it is used to store information temporarily.
 - (5) Auxiliary storage is used to store software and data permanently.
2. Inside a computer
- 1) The system board is the main circuit board of a computer.
 - 2) The microprocessor is the controlling nerve center of a computer. It includes a control unit, an arithmetic unit and a system clock.
3. Internal memory
- 1) RAM: The full name for RAM is Random Access Memory.
 - 2) ROM: Read Only Memory cannot be changed when power to the computer is turned off.
 - 3) Byte: Byte is the basic unit of storage in the computer, and it consists of 8 binary digits.

Exercise 2

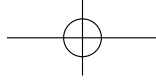
This is a vocabulary-building exercise. Students are supposed to know the meanings of the words and expressions.

Feedback:

- | | | | | |
|-------|-------|-------|-------|--------|
| 1. j) | 2. i) | 3. h) | 4. g) | 5. f) |
| 6. e) | 7. d) | 8. c) | 9. b) | 10. a) |

Exercise 3

This is also a vocabulary-building exercise with the focus on the use of the



words and expressions practiced in Exercise 2. Students are supposed to learn to infer the meanings of new words from the context.

Detailed study of the words and expressions is as follows:

- be capable of** to have the ability necessary for
e.g. That boy is capable of running faster than some adults.
- correspond to** to be equal to; to be similar to
e.g. The American Congress corresponds to the British Parliament.
- process** to deal with
e.g. 1. The transaction is being processed, please wait.
2. The document should be processed before turning in.
- deliver** to send
e.g. 1. You don't have to go out into the rain since the store delivers free of charge.
2. We can ask the boy to deliver the message for us.
- load** to put something into or onto something else
e.g. 1. Have you had your gun loaded?
2. The fully loaded truck hit a rock and tumbled over.
- transfer** to change position; to move
e.g. 1. He has been transferred from Beijing to Shanghai.
2. He was transferred to another post.
- insert** to put something into an opening
e.g. 1. I inserted a sheet of paper into the printer.
2. He inserted one 50-cent coin into the telephone.
- visible** that can be seen
e.g. 1. The outline of the mountains was clearly visible.
2. There is a visible change in attitudes to working women.
- refer to** to mention or speak about someone or something
e.g. 1. Although she didn't mention any names, everyone knew who she was referring to.
2. He referred to the discovery as a major breakthrough in medical science.
- consist of** to include
e.g. 1. His job consists of helping old people who live alone.
2. The article consists of eight parts.

Feedback:

- | | |
|------------------|--------------------|
| 1. consists of | 2. refer to |
| 3. visible | 4. inserted |
| 5. transferred | 6. loaded |
| 7. delivered | 8. being processed |
| 9. correspond to | 10. is capable of |

Task 3 Text A — Sentence and Paragraph Translation**Exercise 1**

This exercise is used to develop students' translation skills from English into Chinese by applying the method of conversion. This translation skill may help students in their future work. The exercise also tests their understanding of the content.

- Remind students that passive voices are often used in scientific articles and when translated into Chinese, many of them are converted into active voices.

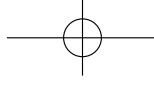
Feedback:

- 1) 这个实验很成功。(名词转换为形容词)
- 2) 我荣幸地通知你, 你的请求已得到批准。(动词词组转换为副词)
- 3) 应当始终注意保护仪器, 使其不沾染灰尘和受潮。(被动语态转换为主动语态)
- 4) 只要仔细把它们比较一下, 你就会发现不同之处。(名词性词组转换为动词词组)
- 5) 这种石头的相对密度是 2.7。(句子转换为名词性词组)

Exercise 2

The purpose of this exercise is to help students to further practice the translation skill of conversion, and to make them aware of how to translate sentences according to the context.

- ◆ *It can be done in pairs or in small groups.*
- ◆ *Later check students' answers and accept any correct answer.*
(注: 加下划线的部分运用了“转换”技巧)

**Feedback:**

1. 任何时候要想运转一个程序, (被动语态转换为主动语态) 都必须首先将该程序复制到存储器当中, 在那里便可以执行指令。(被动语态转换为主动语态)
2. 存储器也可以用来在数据处理过程中 (被动语态转换为主动语态) 对其进行暂时的保存。(副词转换为形容词)
3. 存储器中任何一部分的数据和其他任意部分的数据一样能够以同样快的 (副词转换为形容词) 速度存取。(被动语态转换为主动语态)
4. ROM (只读存储器) 是装有编码信息的存储器, 这些编码信息在计算机关机的状态下是不能够改变也不会丢失的。(被动语态转换为主动语态)
5. 两个或多个字节可以一起保存数据。(被动语态转换为主动语态)

Exercise 3

This exercise encourages students to translate paragraphs and prepares them for this challenge in their future work.

- ◆ *First, ask students to do the translation by themselves.*
- ◆ *Then ask students to discuss their versions with their partners.*
- ◆ *Finally, check them with the following version. Remember to accept any other correct translation.*

Feedback:**内部存储器**

内部存储器是计算机的“工作区域”。任何时候要想运转一个程序,都必须首先将该程序复制到存储器当中去,在那里便可以执行指令。存储器也可以用来在数据处理过程中对其进行暂时的保存。

 计算机存储器

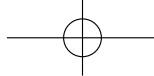
存储器通常被叫做 RAM (随机存储器)。它描述了计算机内部存储器的重要的特点: 存储器中任何一部分的数据和其他任意部分的数据能够以同样快的速度存取。

 只读存储器 (ROM)

ROM (只读存储器) 是装有编码信息的存储器, 这些编码信息在计算机关机的状态下是不能够改变也不会丢失的。

 字节 (Byte)

计算机存储的基本单位是字节。它包括八个二进制数字 (bit: 存储设



备中的最小信息容量单位)。使用美国信息交换标准码 (ASCII: American Standard Code for Information Interchange) 时, 存储器中的一个字节可以储存一个字母、数字或特殊字符。两个或多个字节可以一起用来保存数据。

Task 4 Text B — Reading for General Comprehension

Exercise 1

This exercise is designed to check students' general ability to comprehend the text. It can be done orally or in writing. Do not let students refer back to the text while doing this exercise.

Feedback:

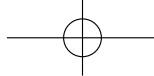
1. CRT stands for cathode ray tube. It is the television-like video monitor.
2. The pixel, meaning picture element, is the basic element of screen illumination (resolution). A pixel is a single point on the screen that can be illuminated.
3. The combination of the keyboard and monitor functions the same as a typewriter.
4. The position is marked by the cursor.
5. Impact printers, such as dot-matrix printers, create the letter images by a printing element striking the paper through an inked ribbon.
6. Nonimpact printers, such as laser printers, use copying machine techniques.
7. It is a hand-sized unit.
8. The functions of the mouse are to control positioning of the cursor and selection operations.
9. The floppy disk is a removable storage medium and can store information limited in amount; the hard disk is a fixed storage medium that has far greater storage capacity and provides with faster access than floppy disks.

Exercise 2

This exercise tests students' ability to summarize a passage. It further checks students' general comprehension.

Feedback:

The article introduces five types of basic computer hardware. *The monitor*



is a screen where the characters are displayed; *the keyboard* is the main data input device; *the printer* is divided into two kinds, impact and nonimpact; *the mouse* is used to control positioning of the cursor and selection of operations; *magnetic disk storage units* have two types: the floppy disk and the hard disk.

Task 5 Text B — Reading for Specific Information

This exercise is to test students' ability to understand specific information in the passage. They can refer to the text at this stage.

Exercise 1

Fill in the relevant information about computer hardware.

Feedback:

The monitor

1. CRT: also called monitor — the basic output device.
2. The resolution: the measure of the number of elements.
3. The pixel: the basic element of screen illumination (resolution).

The keyboard

1. The keyboard: the main data input device.
2. The cursor: marks the position at which each character from the keyboard is displayed on the screen.

The printer

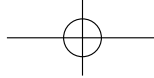
1. Impact printers: create the letter images by a printing element striking the paper through an inked ribbon.
2. Nonimpact printers: use copying machine techniques.

The mouse

1. The functions of the mouse: to control positioning of the cursor and selection operations.
2. The advantage: to perform the same actions more quickly than with the keys of the keyboard.

The magnetic disk concept

1. The floppy disk:
 - a) removable storage medium
 - b) storing information limited in amount



2. The hard disk

- a) fixed storage medium
- b) having far greater storage capacity and much faster access

Exercise 2

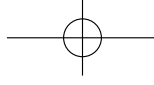
This is a vocabulary-building exercise. The students are supposed to learn to infer the meanings of the new words from the context and also learn the words and expressions listed in this exercise.

Detailed study of the words and expressions is as follows:

- be analogous to** to be similar to
e.g. 1. This proposal was analogous to/with the one we discussed at the last meeting.
2. His findings are analogous to/with our own.
- detect** to discover
e.g. 1. The dentist could detect no sign of decay in her teeth.
2. I detected a smell of gas.
- in conjunction with** together with
e.g. 1. The moon is in conjunction with the sun.
2. The worksheets are designed to be used in conjunction with the new course books.
- provide with** to supply with
e.g. 1. They provide us with food.
2. The school provides the children with books.
- categorize** to put people or things into groups according to what type they are
e.g. 1. The population is categorized according to age, sex, and socio-economic group.
2. He doesn't like to be categorized as a socialist.
- designate** to choose someone or something for a particular job or purpose
e.g. 1. He designated Smith as his successor.
2. We are going to designate this room as a non-smoking area.

Feedback:

1. B 2. A 3. B 4. A 5. B 6. A



Task 6 Text B — Sentence and Paragraph Translation

This exercise is to further check students' ability to apply the translation skill of conversion.

Exercise 1

This exercise is used to further develop students' translation skill of conversion in translating sentences from English into Chinese. It is also used to check their understanding of the text.

Feedback:

1. 敲击计算机键盘上的每一个键，相应的字符便显示在显示器上。
2. 鼠标是一个手掌大小的东西，与计算机相连接，在一个平面上拖动时便把定位信息传递给计算机。
3. 尽管键盘上的按键也能进行同样的操作，但是很多的操作用鼠标则完成得更快。
4. 在程序控制下，存储器中的数据能够写进磁盘里，原来写进的信息可以复制到存储器中去。

Exercise 2

This exercise aims to help students to further practice translation. Besides, make students aware of how to translate sentences according to the context.

- ◆ *It can be done in pairs or in small groups.*
- ◆ *Later check the students' answers and accept any possible answers.*

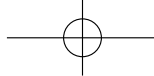
Feedback:

1. 计算机的基本输出装置是像电视一样的视频显示器。
2. 显示在屏幕上的字符由一系列的光点组成。
3. 构成字符的元素越多，显示器的分辨率就越高。
4. 屏幕照度（分辨率）的基本元素叫做像素，意思是图像的元素。

Exercise 3

This exercise is designed to encourage students to do paragraph translation to prepare them for their future work.

- ◆ *First, ask students to do the translation by themselves.*



- ◆ *Then, ask students to discuss their translated version with their partners.*
- ◆ *Finally, check with the following translation. Remember to accept any other proper way of translation.*

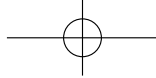
Feedback:

计算机的基本输出装置是像电视一样的视频显示器。它通常被称作阴极射线管 (CRT: Cathode Ray Tube)。显示在屏幕上的字符由一系列的光点组成——点越多，图像越清晰。元素数量的测量单位是分辨率：构成字符的元素越多，显示器的分辨率就越高。屏幕照度（分辨率）的基本元素叫做像素，意思是图像的元素。一个像素是指屏幕上能够照亮的点。

Self-assessment (10 points)

Feedback:*Exercise 1*

1. The processor of a computer performs all calculations and comparisons and controls overall operation of the computer and its components.
2. A microprocessor is the processor in a microcomputer.
3. Microprocessors came into existence in 1971.
4. Microprocessors have had a huge impact not only on the computer industry, but on many other industries as well.
5. The low cost and small size of microprocessors made it possible to put “intelligence” in all sorts of machines.
6. Sewing machines and automobiles are listed as examples controlled by microprocessors.
7. The control unit directs operations within the computer.
8. The control unit is compared to a combination of traffic officer and automatic telephone switchboard.
9. The arithmetic/logic unit is responsible for arithmetic and logical operations.
10. The system clock determines how fast the computer runs.
11. Automobile engines have function so similar to microprocessors.



12. Both microprocessors and automobile engines have different designs, but they are all designed to “propel” the machines.

Exercise 2

The basic components of any computer are input, output, processor, memory, and auxiliary storage. The main circuitry of the computer is mounted on an electronic circuit board called the motherboard. Included is the microprocessor, which provides both the overall control of the computer and the ability to perform arithmetic operations. Before anything can take place in a computer, the program of instructions must be placed in memory. While the program is being run, it moves data in and out of memory. The basic memory element is the byte.

Exercise 3

计算机的基本元件是输入装置、输出装置、处理器、存储器和外部存储装置。计算机的主要电路系统安装在一个叫做母板的电路板上，其中包括微处理器。微处理器既提供计算机的全面控制，又能够进行运算操作。计算机进行任何操作之前，必须将指令程序安装到存储器当中。当程序运行时，它把数据在存储器中移入和移出。存储的基本元素是字节。

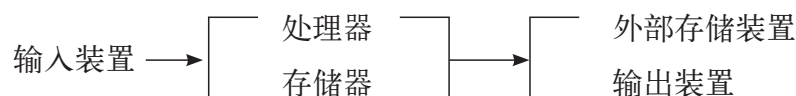
Chinese Version of the Texts

Text A

计算机硬件（一）

计算机的逻辑结构

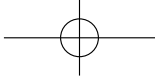
计算机的基本操作功能包括数据输入、输出、存储、运算和比较。这些功能是由下图所示的计算机相应的各种部件来完成的。



计算机的逻辑结构图

□ 输入

输入装置将数据输入计算机系统；键盘是计算机标准的输入装置。

 输出

输出装置将处理过的结果发送给“人们”使用；显示器和打印机是计算机标准的输出装置。

 处理器

处理器是计算机的心脏。其中有电路系统进行运算操作、比较以及为计算机的运转提供全面的控制。

 存储器

计算机的存储器也叫做内部存储器，它是计算机的电子部件。存储器用于在信息处理过程中对信息进行短时间的存储。例如：处理一个命令时，处理命令程序必须保存在存储器当中。在处理操作过程中，数据将被调入和调出存储器。当另外一个应用程序装入存储器时，或者当计算机关机时，存储器中的原有信息就丢失了。

 外部存储器

外部存储器是计算机用来长期存储软件和数据的部件。驱动器是计算机的外部存储媒介。因为多数存储设备使用旋转磁盘，所以磁盘存储这一术语便被广泛使用。在计算机运转期间，可将软件从外部存储器复制到内部存储器当中去，数据也可以在外部存储器和内部存储器之间进行来回转换。

计算机内部

如果你将计算机的外壳拆开，就能清楚地看到电源、磁盘驱动器、扬声器、主系统板和扩充插槽。

 系统板

系统板也叫做主板，它是计算机的主要电路板。为提高计算机的性能，系统板中装有其他电路板能够插入的扩充插槽。

 微处理器

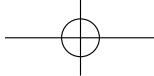
微处理器是计算机的神经控制中心。它包括控制计算机整体运转的控制设备、一个进行运算和比较操作的运算 / 逻辑设备以及用于调整时间的系统时钟。

内部存储器

内部存储器是计算机的“工作区域”。任何时候要想运转一个程序，必须首先将该程序复制到存储器当中去，在那里便可以执行指令。存储器也可以用来在数据处理过程中对其进行暂时的保存。

 计算机存储器

存储器通常被叫做 RAM（随机存储器）。它描述了计算机内部存储器的重要特点：存储器中任何一部分的数据和其他任意部分的数据能够以同样快的速度存取。



□ 只读存储器 (ROM)

ROM (只读存储器) 是装有编码信息的存储器。这些编码信息在计算机的状态下是不能够改变也不会丢失的。

□ 字节 (Byte)

计算机存储的基本单位是字节。它包括八个二进制数字 (bit: 存储设备中的最小信息容量单位)。使用美国信息交换标准码 (ASCII: American Standard Code for Information Interchange) 时, 存储器中的一个字节可以储存一个字母、数字或特殊字符。两个或多个字节可以一起用来保存数据。

Text B

计算机硬件 (二)

基本的输入和输出装置

□ 显示器

计算机的基本输出装置是像电视一样的视频显示器。它通常被称作阴极射线管 (CRT: Cathode Ray Tube)。显示在屏幕上的字符由一系列的光点组成——点越多, 图像越清晰。元素数量的测量单位是分辨率: 构成字符的元素越多, 显示器的分辨率就越高。屏幕照度 (分辨率) 的基本元素叫做像素, 意思是图像的元素。一个像素是指屏幕上能够照亮的一个点。

□ 键盘

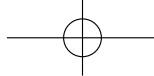
显示器是计算机的基本输出装置, 而与打字机相似的键盘则是主要的输入装置。键盘和显示器组合在一起与打字机颇为类似。敲击计算机键盘上的每一个键, 相应的字符便显示在显示器上。实际上, 计算机发觉哪一个键被敲击, 就将该字符保存在存储器中, 然后将图像传送到显示器。通过键盘输入的每一个字符都显示在屏幕上, 其位置由一个元素标出, 这个元素叫做光标。

□ 打印机

打印机的一种分类方法是根据它是否击打。击打式打印机是通过色带击打纸张, 把文字呈现出来的, 比如点阵打印机。非击打式打印机使用复印机的技术, 例如激光打印机。

□ 鼠标

鼠标是一种与显示器一起使用的指示装置, 它使编辑和输入操作更简化。鼠标是一个手掌大小的东西, 与计算机相连接, 在一个平面上拖动时可以把定位信息传递给计算机。这一信息可用来在任何一点很快确定光标的位置。鼠标有一个或多个按键来控制光标的位置以及对操作进行选择。它特



别便于标明一个或多个需要删除、移动或修改的字符或词。尽管键盘上的按键也能进行同样的操作，但是很多的操作用鼠标则完成得更快。

储存装置

磁盘的概念

磁盘储存装置主要有两种：一种是可移动的存储媒体；一种是固定、不能移动的存储媒体。这两种方式计算机都使用，而且这两种方式都基于同样的原理，即在磁盘上储存和获取信息。

软盘

用户用软盘将少量信息储存在费用相对较低的磁盘上。磁盘插入计算机的磁盘驱动器之后，涂有磁性材料的塑料磁盘表面在保护罩内旋转。在程序控制下，存储器中的数据能够写进磁盘里，原来写进的信息可以复制到存储器中去。

硬盘

硬盘为用户提供比软盘更大的储存容量，而且获取的速度也比软盘快得多。但是这种存储方式不能像软盘那样可以移动。