



全国教育硕士专业学位推荐教材

顾明远 总主编

英语

教师用书

(第二版)

毛大威 主编

许梅先
余静娴 副主编
徐汝舟

人民教育出版社

全国教育硕士专业学位推荐教材



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使用说明

本书是为在职攻读教育硕士专业学位研究生英语统编教材配套使用的教师用书，为使用本教材的教师提供了课文中练习的参考答案与相关背景知识。

本书内容编排如下：每单元均以课文中练习的顺序编排，共分为三部分。

第一部分为课前准备 (Prepare Yourself) 的参考答案，包括 “Do you know”, “How do you say it” 及 “Make up a sentence” 三项。其中中英文词汇的译文只给了一个参考答案，教师可根据情况自行给出相关的其他参考答案，来扩大学生对这些词汇的认知。“Make up a sentence” 中的句子成分是从课文中提取的，标准答案即为课文中的原句，如果学生造出的句子与原文不一样，但在文法与逻辑上都说得通，也应认可。

第二部分是该单元所有课文中出现或涉及的相关内容的背景知识，供教师在备课、讲课中参考。由于教师对课文中文化背景知识的关注点和兴趣点会各不相同，所以给出的补充材料不一定能满足每位教师的需要。有些内容尚需使用者自行查找。

第三部分是书中练习的参考答案。“Comprehension questions” 的参考答案在其他教材中往往是不做的，因为答案可以因对问题理解的角度不同，而有所差异。我们之所以做了，仅仅是给教师一个可把握的“认知点”而已。给出的参考答案决非唯一。教师可以它为出发点去考查学生的回答。其他练习答案均按顺序给出，以便查找。实用写作部分除个别句子或段落改写练习外，未附答案。

编 者

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Unit 1 Literature

Prepare Yourself

Do you know?

通信卫星 移动通信 智能机器人
克隆 远程通信

How do you say it?

literature science fiction space traveling alien
human society hi-tech information age information industry

Make up a sentence

It took 100 years before the moon landings predicted by the French writer Jules Verne actually took place.

Background Information & Additional Notes

1. **Other speculations that have been proved accurate:** As cultured animals, human beings have been using their imagination to invent new devices in the long history of the world. The last two hundred years saw a number of technological discoveries predicted in the books of science fiction writers. Apart from space travel, the moon landings, communications satellites, nuclear power, robots, cloning and mobile telephony mentioned in this article, some other scientific devices and developments, such as the submarine, the aqualung, the television, mechanical brains (computers in reality) appeared in books before they were physically created. The destruction of the world as a result of its own technological achievements has now become a favorite theme of science

fiction, which has made human beings ponder on a better and more humane exploitation of their scientific discoveries and technological developments.

- 2. Men's exploration of alien beings:** Men have always been searching for intelligent beings like us in cosmos. Reporting of close encounters with alien beings has kept coming into our media ever since. Alien beings are also regarded as intelligent extraterrestrial beings, creatures from other planet in space. Eyewitnesses reported a number of different types of alien creatures which vary in almost every imaginable way. Surprisingly, however, those reported aliens themselves are not so very different from human beings — most have two arms, two legs, and one head. For this reason some ufologists doubt their existence. They claim that those visitors from outer space would not look so much like ourselves. They were actually the inhabitants of human minds. But whatever the experts may say, close encounters of the third kind continue to be reported till this day. How should we look at this issue? Larry Klaes's comment may cast some light on us: "Most folks know little about how vast our cosmos is or even how it is set up. We live on a rather small rock circling a small yellow star that is one of 400 billion in a huge collection of such luminous gas balls called the Milky Way galaxy. Most of these stars average several light years apart, a distance which would take our Pioneer and Voyager space probes tens of thousands of years to reach even the nearest stars. In other words, we live in a galaxy that is so large and so populated that it is ludicrous to imagine that beings of other star systems would know about us unless they were very nearby on a cosmic scale. And what would we have to offer these beings who can cross interstellar distances, assuming such advanced intelligences exist and would want to make the journey? This is not to say that there are not ETI who explore other star systems, but many scientists find it doubtful that they are here in the numbers that the public reports every day, if there are even any ETI here at all! "

- 3. The first robot:** A robot is an automatically operated machine that does mechanical, routine tasks on command, though it may not resemble human beings in appearance or perform functions in a humanlike manner. Elementary robot mechanisms can be traced back to the Industrial Revolution, when the steam engine was invented to replace human effort and increase productivity. Developments in microelectronics and computer technology since the late 1960s brought about great advances in robotics.

The following are the major events in robotic development.

History Timeline of Robotic Development

1920 Czechoslovakian playwright Karel Capek introduces the word "robot" in the play *R.U.R. — Rossum's Universal Robots*. The word comes from the Czech *robota*, which means tedious labor.

- 1938 The first programmable paint-spraying mechanism is designed by Americans Willard Pollard and Harold Roselund for the DeVilbiss Company.
- 1942 Isaac Asimov publishes *Runaround*, in which he defines the Three Laws of Robotics.
- 1946 Emergence of the computer; George Devol patents a general purpose playback device for controlling machines, using magnetic recording; J. Presper Eckert and John Mauchly build the ENIAC at the University of Pennsylvania—the first electronic computer; At MIT, Whirlwind, the first digital general purpose computer, solves its first problem.
- 1948 Norbert Wiener, a professor at MIT, publishes *Cybernetics or Control and Communication in the Animal*, a book that describes the concept of communication and control in electronic, mechanical, and biological systems.
- 1951 In France, Raymond Goertz designs the first teleoperated articulated arm for the Atomic Energy Commission. The design is based entirely on mechanical coupling between the master and slave arms (using steel cables and pulleys). Derivatives of this design are still seen in places where handling of small nuclear samples is required. This is generally regarded as the major milestone in force feedback technology.
- 1954 George Devol designs the first programmable robot and coins the term “Universal Automation”, planting the seed for the name of his future company—Unimation.
- 1959 Marvin Minsky and John McCarthy establish the Artificial Intelligence Laboratory at MIT.
- 1960 Unimation is purchased by Condec Corporation and the development of Unimate Robot Systems begins. American Machine and Foundry, later known as AMF Corporation, markets the first cylindrical robot, called the Versatran, designed by Harry Johnson and Veljko Milenkovic.
- 1962 General Motors purchases the first industrial robot from Unimation and installs it on a production line. This manipulator is the first of many Unimates to be deployed.
- 1963 John McCarthy heads up the new Artificial Intelligence Laboratory at Stanford University.
- 1964 Artificial intelligence research laboratories are opened at MIT, Stanford Research Institute (SRI), Stanford University, and the University of Edinburgh.
- 1964 C&D Robotics founded.
- 1965 Carnegie Mellon University establishes the Robotics Institute.
- 1965 Homogeneous transformations applied to robot kinematics—this remains the foundation of robotics theory today.
- 1967 Japan imports the Versatran robot from AMF (the first robot imported into Japan).
- 1968 Kawasaki licenses hydraulic robot design from Unimation and starts production in Japan.
- 1968 SRI builds Shakey, a mobile robot with vision capability, controlled by a computer the

- 1970 Professor Victor Scheinman of Stanford University designs the Standard Arm. Today, its kinematic configuration remains known as the "Standard Arm".
- 1973 Cincinnati Milacron releases the T3, the first commercially available minicomputer-controlled industrial robot (designed by Richard Hohn).
- 1974 Professor Victor Scheinman, the developer of the Stanford Arm, forms Vicarm Inc. to market a version of the arm for industrial applications. The new arm is controlled by a minicomputer.
- 1976 Robotic arms are used on Viking 1 and 2 space probes. Vicarm Inc. incorporates a microcomputer into the Vicarm design.
- 1977 ASEA, a European robot company, offers two sizes of electric powered industrial robots. Both robots use a microcomputer controller for programming and operation.
- 1977 Unimation purchases Vicarm Inc.
- 1978 Using technology from Vicarm, Unimation develops the PUMA (Programmable Universal Machine for Assembly). The PUMA can still be found in many research labs today.
- 1978 Brooks Automation founded.
- 1979 Sankyo and IBM market the SCARA (selective compliant articulated robot arm) developed at Yamanashi University in Japan.
- 1981 Cognex founded.
- 1981 CRS Robotics Corp. founded.
- 1982 Fanuc of Japan and General Motors form joint venture in GM Fanuc to market robots in North America.
- 1983 Adept Technology founded.
- 1984 Joseph Engelberger starts Transition Robotics, later renamed Helpmates, to develop service robots.
- 1986 With Unimation license terminated, Kawasaki develops and produces its own line of electric robots.
- 1988 Staubli Group purchases Unimation from Westinghouse.
- 1989 Computer Motion founded.
- 1989 Barrett Technology founded.
- 1993 Sensable Technologies founded.
- 1994 CMU Robotics Institute's Dante II, a six-legged walking robot, explores the Mt. Spurr volcano in Alaska to sample volcanic gases.
- 1995 Intuitive Surgical formed by Fred Moll, Rob Younge and John Freud to design and market surgical robotic systems. Founding technology based on the work at SRI, IBM and MIT.
- 1997 NASA's Mars Path finder mission captures the eyes and imagination of the world as Path finder lands on Mars and the sojourner Rover Robot sends back images of its travels on

the distant planet.

1997 Honda showcases the P3, the 8th prototype in a humanoid design project started in 1986.

2000 Honda showcases Asimo, the next generation of its series of humanoid robots.

2000 Sony unveils humanoid robots, dubbed Sony Dream Robots (SDR), at Robodex.

2001 Sony releases the second generation of its Aibo robot dog.

2001 Built by MD Robotics of Canada, the Space Station Remote Manipulator System (SSRMS) is successfully launched into orbit and begins operations to complete assembly of International Space Station.

4. First communications satellite: A communications satellite provides radio, telephone, and television communication by transmitting signals it receives while orbiting the earth. The first satellite communications experiment, called Project SCORE, was made by USA, in which they launched a satellite on Dec. 18, 1958. One of the best known early communications satellites was Echo 1 which, launched on Aug. 12, 1960, was a balloon made of plastic coated with a thin layer of aluminum. Other well-known early communications satellites included Telstar (1962), Syncom 2 (1963), Syncom 3 (1964), etc., and the first commercial communications satellite, Intelsat 1, was launched on April 6, 1965.

5. Information age: A coming new age in which information dominates social life is occurring and the collection, organization and transmission of information are essential for social and economic progresses. In the information age, information technology, such as computers, telecommunications, the Internet, etc., is booming and widely applied in almost all aspects of social life. Information literacy is a very important quality of successful people. People with imagination and creative ideas play an important role in the society. This is what is emphasised in the article *What's the Big Idea?*

6. Some well-known science fiction writers and their works

Name	Works
Isaac Asimov	Foundation series (Hugo, 1966); including Foundation's Edge (1983); A Memoir; "Gold" (1992)
H.G. Wells	Men Like Gods; The Time Machine; The Island of Dr. Moreau; The Invisible Man; The War of the Worlds; The First Men in the Moon; The Food of the Gods; In the Days of the Comet