College Core English

· Listening and Speaking ·

大学核心英语

听说教程

第六册　教师参考书

杨惠中　张彦斌 主编

Pamela　Brelsforth 编写

高等教育出版社

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内 容 提 要

《大学核心英语》系根据1985年国家教委颁发的《大学英语教学大纲(理工科适用)》编写的系列分级教材。全套教材共分两条主线：读写教程和听说教程。

本书配合《听说教程》(第六册)使用，内容包括听力材料原文、注释、讲解重点及练习答案，方便教学。

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INTRODUCTION

The listening exercises in Book 6 are a continuation and development from those which appeared in Book 5. The two books together provide a complete course in note-taking from an audio source. In this book, however, the students progress through 5 stages of note-taking; each stage is developed over 2 units. Units 6 and 12 are revision units presented in examination format. At the end of Unit 5, the students should be able to understand the general idea of a short passage and take notes with only minimal clues given. At the end of the book, they should be able to understand the general idea and take notes of their own without any formal guidance.

All the listening passages are taken from authentic sources, either BBC TV or radio programmes (such as Open University science lectures, or television documentaries) or Australian radio programmes of an educational nature. The topics of the listening passages are all related in some way to the corresponding reading passages in Book 6. All the recordings are extracts from authentic broadcasts, as were the final 4 units of Book 5. The students are thus exposed to a very wide range of English speech and materials which are not specifically designed for the purposes of teaching language. Definitions and explanations of new words and expressions are given in this *Teachers' Book*, together with some background information about the extracts. A second tape accompanies the package. This is a specially re-

corded version of each extract, clearly enunciated for students who may be having difficulty understanding the authentic version.

The purpose of the conversation exercises is to develop the students' ability to present facts and opinions to a large audience, and to present a convincing argument in group discussions. This section begins with a revision of important communication skills and then provides a variety of situations in which these skills might be practised. Each unit includes at least one newspaper extract to stimulate appropriate conversation.

Pamela Brelsforth

Contents

UNIT ONE

A. COMPREHENSION

This extract is taken from an interview with the famous biologist, Dr. Bronowski, in which he discusses the structure of matter and how various theories on that subject have changed since the last century. The original recording is published by Australian Broadcasting Commission. The theme in this unit follows on from the theme in Unit 15 of Book 5. The second voice on the tape belongs to George Steedman, interviewer.

Comprehension 1

JB You will recall, that there are three branches of physics that I have been stressing: relativity, that is the relations of space, time, gravitation of, roughly speaking, the overall structure of the world in the large; secondly, quantum physics and the principle of uncertainty, that is the recognition of the fact that in the actions of the universe ...er ...the structure of energy is as important as the structure of matter. But we must settle to talk about the structure of matter because that's a way in which our picture has changed so greatly since the last century ... so greatly that it seems fantastic.

I would think that in the year ... what ... 1930, when I was just graduated, and you were still at school ... at that time, in

1930, if you had gone out into the street and said to the first 10 people: "What is an atom?" you would have had 10 stares and no words at all.

Today, if you go out and say to the first 10 people: "What is an atom?" you will get 10 answers; all of them wrong, but all of them with some sense that this is a word that they understand, that they ... It says something about the structure of the world they don't know very well yet, but they're like the contemporaries of Newton who knew about gravitation but didn't know quite what it was. How has that change taken place?

Well, it began, of course, in the 1890s when strange phenomena appeared in thin gases through which electric currents were passed which, in 1897, turned out to herald the existence of particles smaller than individual atoms ... particles that were later called electrons.

The fact that they were in electric currents is important because they strongly predisposed every scientist to believe that all matter is really condensed electricity. That's not true, I hasten to say, but that's what we all thought when I was an undergraduate. We all thought that somehow electricity made those smoke rings you're fond of talking about, and they became so tight in the atom that they took on material qualities.

And we were so dominated by the idea of electricity, that we couldn't make sense of the way the electrons lay inside the atom and went round the nucleus. We couldn't make sense of the nucleus. The nucleus, we said, was positive electricity . .

the electrons are negative electricity circling round like a planetary system.

Well, the great balloon went up in 1932, when that contemporary of mine, only a few years older, James Chadwick, discovered that that picture was wrong . . that there is a fundamental unit of matter inside the atom which has no electrical properties, which is neutral and which is therefore called the neutron.

GS But yet behaves like a lump of matter in certain circumstances.

JB Yes. But it has the great advantage that it is not involved in electrical exchanges. When it is approached by electrons, it doesn't repel or attract the electrons. It remains neutral to them. And when it is linked, as it is in the nucleus, to positive charges, again it doesn't repel or attract them. It links and forms units with them, out of which matter is made.

If your Ss find it difficult to follow the unfamiliar voices, you may wish to play the tape twice for this first unit.

Correct answers:

1. Relativity, quantum physics and the principle of uncertainty, the structure of matter.
2. Theories have changed so much since the last century, i.e. more has been learned than in other areas.
3. Public awareness: in 1930, no-one had even heard

of the atom; today, people have heard of it even if they still don't really know what it is.

4. Particles smaller than atoms were found in electric currents and . . named electrons. Scientists . . believed that all matter was condensed electricity.
5. In 1932, Chadwick discovered a fundamental unit inside the atom which has no electrical properties but remains neutral to electrical charges and was ..called the neutron. This links and forms units with positive charges to form the structure of matter.

Comprehension 2

"You will recall .... so greatly that it seems fantastic."

Again, as the voices on authentic tapes are unfamiliar to the Ss, you may wish to play the tape twice. Before doing so, however, allow the Ss time to complete what they can after the first listening. They may find it easier to write everything down in pencil and then shorten their notes into a concise form before completing them in ink.

Correct answers:

1. 3 branches of physics: a. relativity
   i.e. relations of space, time, gravitation
   b. quantum physics and

principle of uncertainty

c. structure of matter

Slight variations are acceptable if notes are clear and if key information is included.

Comprehension 3

"I would think .... but didn't quite know what it was."

Some inference is needed here. The Ss should use their answers to Exercise 1 as a guide. Their own words may differ from this key, but the basic idea should not.

Correct answers:

2. Change in public awareness: e.g. the atom

a. 1930: unheard of

b. present day: heard of but not completely understood

Comprehension 4

"How has that change taken place? . . out of which matter is made."

Correct answers:

3. Discovery of electrons; In 1890s strange pheno-

mena appeared in gases through which electric currents were passed.
In 1897 particles smaller than atoms were identified.
. .scientists believed all matter was condensed electricity.

4. Discovery of neutrons: In 1932 James Chadwick discovered fundamental unit of matter inside the atom with no electrical properties.
i.e. it is neutral.

5. Advantage of neutrons: not involved in electrical exchanges
i.e. do not repel or attract electrons
do not repel or attract positive charges.
unite with positive / electrical charges to form matter.

B. CONVERSATION

This unit reviews giving opinions, evaluating evidence and expressing prediction and uncertainty. Allow the Ss time for free oral interaction in groups at the end of the lesson. Also

ask individual questions to elicit their opinions on various topics.

In Practice 1, note that certain structures can be put together while others can not. In Practice 3, encourage the Ss to give reasons if they can. In Practice 4, the news item must be open-ended i.e. one that allows conjecture and opinion. The newspaper extract is taken from *The Economist August 15 1987* '*Tomorrow's Animals*'

Notes on the Text:

Dr Jacob Bronowski was a Polish immigrant in the U. S. A., working as a physicist during the Second World War. He was among the team who worked on splitting the atom and producing the atom bomb. When the bomb was used as a weapon on Japan, Bronowski gave up his work as a physicist and turned to another field of science, biology. He is most interested in anthropology and is famous for his British Broadcasting Company series 'The Ascent of Man' which traces mankind's origins and progress throughout history and prehistory.

UNIT TWO

A. COMPREHENSION

This extract is taken from a videotape entitled: "Voyages of Discovery" shown in Britain by the BBC in August 1988. The complete video shows 3 significant discoveries, but for the purpose of this book only the discovery of silver and gold is important. Review the vocabulary before playing the tape. The 2 speakers on the tape are not named and are therefore referred to as A and B.

Comprehension 1

A The explorers of the 15th and 16th centuries weren't starry-eyed romantics. They had other motives, one of which was to find silver and gold. And they did find them — gold on the west coast of Africa, and silver.. silver ores in the mines of Mexico and Peru.

The silver ores were turned into silver by chemistry and then shipped across the Atlantic to Europe. From there, the silver travelled east to buy goods like cotton, silk and porcelain from India and China. Science, you see, isn't just theory and experiment. It's part of a whole social and economic system ...

In this house, now a museum, there's evidence of that...

B The evidence is cargo from a Dutch trading ship that was wrecked off Madeira in 1724. It was bound for China, via the Cape of Good Hope.

A The ship was carrying silver...

B Spanish silver was extracted from its ores using mercury, the liquid metal, and mercury is hard to come by. So the Spaniards mined cinnabar, the sulphide of mercury, and heated it. Later you'll see how chemical reactions have carried men to the moon and turned oil into cloth. This one supplied the mercury Spain needed to make its silver..silver that was then melted and cast into the currency of international trade.

Silver is valued because it's scarce, and because its beautiful sheen is easy to maintain. But, in this respect, there's one metal prized even above silver...

Gold like this in Madeira's cathedral is scarce, colourful and, in common experience, untarnishable. Neither gold nor silver is easily destroyed. When it's heated, gold doesn't burn. It melts at about 1,000 degrees centigrade. When the liquid is cooled and solidified again, the gold is unchanged and intact.

Gold and silver drinking cups are a sign that these metals don't rust or corrode in water...Why are silver and gold similar? Scientists extracted an answer from the work of a Russian chemist, Dimitri Mendeleyev. It's because of a similarity

between silver and gold atoms, the tiny particles of which each metal is made. This atomic theory also explains why some metals are very different from silver and gold.. why potassium, for example, corrodes very quickly in water, and why caesium corrodes even faster.

A Science's greatest moments occur when two great theories clash. Confronted by the same experiment, they predict two different results. Then, the experiment weighs one theory against another. The result tips the balance just to one side.

Correct answers:

1. It was used as the currency of international trade i. e. to purchase things from India and China.
2. Silver ore and mercury, or cinnabar, the sulphide of mercury.
3. It is even scarcer, more colourful and untarnishable.
4. Their atoms are similar.
5. Different theories may use the same experiments to try to prove opposite results. It is only when the experiment is performed that the true theory can be established.

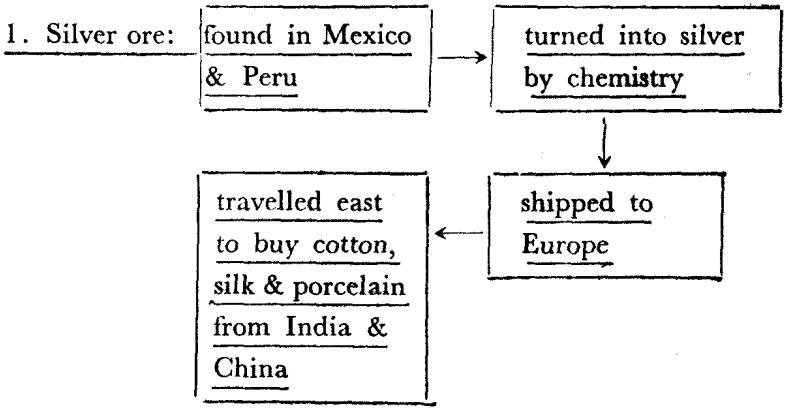
Comprehension 2

"The explorers of....there's evidence of that."

Allow the Ss time to complete their rough notes before

playing the tape again for them to improve their presentation.

Correct answers:



Comprehension 3

"The evidence is....currency of international trade."

You may need to play this section more than once as the different stages in the process are interrupted by irrelevant details. It might help if the Ss draw their boxes first and then just fill in the information as they hear it.

Correct answers: