

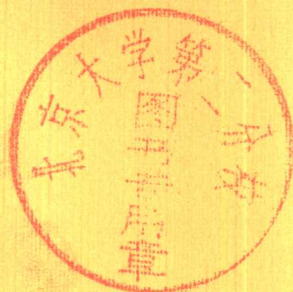
高等学校教学参考书

TEACHER'S BOOK

英语 第三册(冶金类)

教师参考书

北京钢铁学院 主编
昆明工学院 东北工学院



人民教育出版社

本

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内 容 提 要

本书是配合《英语》第三册(冶金类)编写的教学参考书。内容包括:课文参考译文,词汇学习,重点语法,副课文注释、参考译文和习题答案。全书用英语写成。书中材料选自多种原著。对一些同义词作了比较详细的阐述,对原教材中的若干语法现象作了补充,因而为教师的教学工作提供了方便。本书也可作为有关人员的自学用书。

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Preface

The aim of this book is to provide a convenient work of reference for those teachers who wish to save time and to improve their teaching in their classrooms. It is also for those people who may use it in their homes. To achieve this aim, five sections have been included: Translation of the Text, Word Study, Grammar, Key to Exercises, Translation and Notes to the Extra Readings.

An attempt has been made to translate the Text, the Extra Readings and the rest as clearly, fluently, and accurately as possible. In the Key to Exercises, each question is given only one answer, even if there may be more than one. In Notes to Extra Readings, what are given are only those considered necessary by the editors.

Almost all the materials including examples of Word Study and Grammar are taken directly from nearly seventy different copies of grammar written by more than fifty different grammarians, such as, Jespersen, Poutsma, Sweet, Curme, Onions, Fowler, Sonnenschein, Quirk, etc. and dictionaries, such as, *Oxford Dictionary* (13 vols), *Webster's Third International Dictionary*, *Webster's New World Dictionary*, *Chambers Twentieth Century Dictionary*, *A Dictionary of American Idioms*, *A Comprehensive English-Chinese Dictionary*, *Webster's Dictionary of Synonyms*, *Synonyms* (Funk & Wagnalls Standard Handbook of), etc..

The English level of the editors is not qualified enough,

and the reference books in hand are limited. Therefore any suggestions from the readers are greatly appreciated.

The editors wish to express gratitude to Comrade Lee Shuei-Hwa (李雪华), who collaborated with us during the summer, 1979, and to Comrades Xue Zhi-mao (薛志懋), Qu Ying(曲英), and Wan Tian-ji(万天骥), who helped the editors in one way or another. Finally the editors wish to express indebtedness to Miss Carol Benedict for reading the entire book when it was at the manuscript stage, and for making some suggestions. Without her advice it would have more imperfections.

January, 1981

LESSON ONE

TRANSLATION OF TEXT

人 造 材 料

我们生活在一个人造材料的世界里。钢、铝、塑料、陶瓷、铜、玻璃以及所有其他的材料都是我们的设想、设计、产品计划和兰图的具体产物。

当然，材料对人类文明来说，一直都是极为重要的。从前我们在读历史书籍时已知道，人类历史上最早的三个时代就称为石器时代、青铜时代和铁器时代，因为其中每个时代的文明几乎全都取决于用以命名的材料。在 20 世纪的现今，材料——不是一两种，而是许多种——已成为技术和工业所赖以前进的最重要的因素之一。我们在空间技术、电子技术、原子能方面的进步都是与解决关键性材料的问题直接相关的。即使在许多不那么吸引人的制造业里，材料对产品的计划、设计和制造等也都具有很大的重要性。无论是一支返回大气时需要经受极高温度的火箭锥形弹头，还是一台普通的洗衣机，使用合适的材料对于保证产品的质量，都是必不可少的条件。

让我们进一步看看这个无论对于我们的日常用品还是对于先进的技术都至关重要的材料世界吧。直到本世纪初，它的规模还不算大，仅由我们所熟悉的少数几种普通材料所组成，如：铁、铜、铝、木材、玻璃、陶瓷和橡胶等。但是，后来人们生产了大量的钢和铝，而且各种塑料也开始大量问世了。近 50 年来，新的金属、合金、塑料、橡胶和陶瓷的数量成指数地增加。现在，各种不同的材料已经是 1900 年的数百倍。据估计，现在可获得的合成物和各种品级的材料已达

5,000 到 7,000 种之多。例如, 在 1900 年, 制造汽车使用的材料还不到 100 种。但现在, 制造汽车所用的材料至少有 4,000 种。而一个大型企业在生产各种各样的工业产品和消费品时, 则需使用 14,000 种材料。

尽管现在已有品种多得惊人的各类材料, 但仍在努力继续探寻更佳材料以满足新的需要——不仅在诸如航空及宇宙航行方面的先进技术领域是如此, 在生产普通工业品及消费品方面也是如此。同样, 人们也需要更好的材料以满足对产品质量和可靠性的更高要求, 这些要求集中表现在保证产品的使用寿命和安全可靠方面。最后, 人们还在不断地探寻新的、更好的材料以降低产品的成本。

WORD STUDY

I. Analogous words

vital, indispensable

1. **vital** — necessary to the existence, continuance, or well-being of something.

The materials world is vital for both our everyday products as well as advanced technology.

Secrecy is vital to the success of the scheme.

Air and water are of vital importance to us.

2. **indispensable** — absolutely necessary or requisite.

The use of proper material is indispensable to (for) the success of the product.

Air is indispensable to (for) life.

He made himself indispensable as a companion.

II. Synonyms

period, epoch, era and age

1. **Period** is the general term for any portion of time.

This is his first period of life.

We have four 50-minute periods of lessons before noon.

The figure shows an increase in production of about one third above that of the corresponding period of last year.

2. **Epoch** and **era** are often used interchangeably, but in strict distinction **epoch** applies to the beginning of a new period marked by radical changes, new developments, etc. and **era** to the entire period.

The steam engine marked an epoch in transportation, an era of revolution.

3. **Age** is applied to a period intensified with some dominant personality or distinctive characteristic.

Generally a Copper or Bronze Age preceded the Iron Age in Egypt, Asia, and Europe.

The eighteenth century was the golden age of the English engravers.

indispensable, essential, necessary and requisite

1. **Indispensable** (see above)

2. **Essential**, in strict usage, is applicable to that which constitute the absolute essence of the fundamental nature of a thing and therefore must be present for the thing to exist, function, etc.

Exercise, fresh air, and sleep are essential for the preservation of health.

Her most essential quality is kindness.

3. **Requisite** is applied to that which is required by the circumstances or for the purpose and generally suggests a requirement that is imposed externally rather than an inherent need.

Decision is a quality requisite to a commander.

Every work of art should contain within itself all that is requisite for its own comprehension.

4. **Necessary** implies a pressing need but does not always connote absolute indispensability.

Passports are necessary for all who visit a foreign country.

No alternatives should be made unless absolutely necessary.

III. Phrases

1. **be familiar with, be familiar to**

The world of materials was composed of only the few common ones with which we all are familiar.

I have been familiar with him for years.

He is familiar with German.*

German is familiar to him.*

There were faces not familiar to me.

*The two sentences mean the same thing. But in the first example the interest is directed towards He, in the second towards the German language, i. e. the difference is one of perspective or point of view.

2. demand for, in demand

Better materials are needed to meet their quality and reliability standards, epitomized by long-term product warranties and the demand for safer products.

Our present mode of life is based on an ever-increasing demand for metals.

There is a demand for these goods.*

These goods are in demand.*

These articles are much in demand.

*The same as above, the two sentences mean the same thing. The only difference is one of perspective.

GRAMMAR

Attributive Clauses Governed by Prepositions

1. To avoid ambiguity the relative should be placed as close as possible to its governing noun:

I have read the writings of Plato, who succeeded Socrates.

not

I have read a translation of Plato's writings who succeeded Socrates.

The tools which we bought were in the wooden boxes.

not

The tools were in the wooden boxes which we

bought.

II. Preposition and its object

- A. If the relative is the object of a preposition, the latter frequently precedes:

The few common materials with which we are all familiar are iron, copper, lead, wood, glass, ceramics, and rubber.

In the twentieth century, materials have become one of the most important factors on which the advance of technology and industry depends.

He bitterly regretted that the little book on which he had set his heart had slipped out of his hand.

- B. When the object is the relative "that", "as", the preposition is invariably put last:

He was not the man that we were looking for.

This is the workshop that I saw him go into.

He should read such books as we all approve of.

- C. When the object of a preposition is a relative pronoun understood, the preposition is invariably put last:

This is the man I gave the book to.

This is the pen I write with.

The man (whom) you spoke to is an innovator.

- D. Very often the verb and preposition form together a set phrase which cannot be well separated:

All such books as he is fond of are novels.

Electricity that we make use of every day can flow in a wire.

This is the very funny story which everybody laughs

at.

- III. Though in general the relative pronoun introduces the clauses, we sometimes put some word in the first place, as in the case of the following examples:

So we get this charming book, the newest thing of which is, perhaps, its method.

Metals have many characteristic properties, the most important of which is strength.

- IV. Sometimes a clause is used without a connective, without a formal link joining the clause to the governing noun:

I was getting ready to leave on the very day he came (on which he came).

This is the reason I must keep on doing this experiment (for which I must keep on doing it).

I was satisfied with the way you did your work (in which you did your work).

- V. Relative clauses may be introduced by the relative adverbs when, where, why, meaning (at a time) at which, (a place) at which, (the reason) for which:

Come and see me at a time when I am free (come and see me at a time at which I am free).

We found a place (restaurant) where the food was excellent (we found a place at which the food was excellent).

This is the reason why I don't believe him (this is the reason for which I don't believe him).

KEY TO EXERCISES

Exercise I

1. The man-made materials mentioned in the text are steel, aluminium, plastics, ceramics, copper, and glass.
2. The three humanity's earliest eras are called the Stone Age, the Bronze Age and the Iron Age.
3. Yes, a rocket nose cone must withstand the tremendous heat of reentry into the atmosphere.
4. Yes, this materials world is vital to our everyday products.
5. It is estimated that there are between 50,000 and 70,000 different compositions and grades of materials available now.
6. In 1900, less than 100 different materials were used in automobiles. Today at least 4,000 different materials are used in a car.
7. Yes, the search goes on constantly for new and better materials to lower costs.
8. One large manufacturing corporation uses 14,000 different materials in its industrial and consumer products.

Exercise II

- | | | | |
|----------|----------|----------|----------|
| 1. false | 2. false | 3. true | 4. false |
| 5. false | 6. true | 7. false | 8. false |
| 9. true | 10. true | | |

Exercise III

1. "from which atomic energy is released"

原子核是原子释放原子能的那部分。

2. "through which it acts"

我们所说的功是施加的力和该力通过的距离之乘积。

3. "the shape of which is rather like the shape of a watch"

这些星球形成一个星群,其形状颇象一只表。

4. "atoms act"

根据原子的不同表现人们已经能够对它们的重量进行比较,由最轻到最重列成一表。

5. "all of which were known to and used by the ancients"

铅与铜、锡、铁形成鲜明的对照,后三种早为古人熟知和使用。

6. "that produce the electric current 'we use'"

有些地方以流水驱动发电机,生产我们所用的电流。

7. "at which they change from one physical state to another"

许多纯物质在特定温度下从一种物理状态变成另一种物理状态。

8. "with which a metal corrodes, or changes into a new substance"

当我们研究一种金属是否容易腐蚀或容易变成一种新物质时,我们是在研究该物质的一种化学特性。

9. "in which the process of corroding stops after an oxide film has been developed"

有一类金属在产生氧化薄膜后就会不受腐蚀。

10. "through which currents easily pass"

电流容易通过的物体称为导体。

11. "the most important of which is strength"

金属具有许多特性,其中最主要的特性是强度。

12. "two of which are the power to conduct electric current"