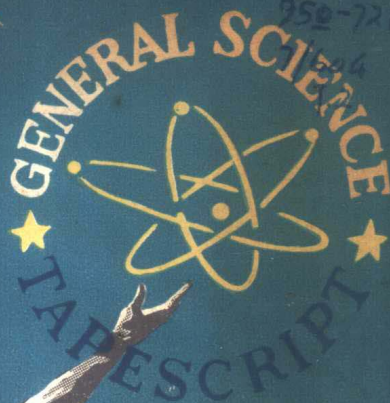


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通俗科学 (下)

科技英语丛书

科学普及出版社

科技英语丛书

通俗科学

下

(听 读 练 习)

〔英〕 M. 希金斯 著

王 洸 吴绳卿 译

科学普及出版社

内 容 提 要

英国朗文出版公司最新出版的《核心》科技英语丛书是一套供学习科技英语的教材,包括通俗科学、数学、物理学、化学、生物学、地质学、工程学、农学、医学和护理学等。

《通俗科学》是这套丛书的基础,介绍一般科学常识和科技英语常用词汇及句型。原书分三册:学生读本、教师手册和听力材料。现分上、下两册出版。上册是学生读本(附练习解答和参考译文),图文并茂,新颖有趣;下册是听读练习(附参考译文,另配有录音带),遣词造句,生动活泼。全书由浅入深,循序渐进,使读者能逐步提高阅读和听说英语的能力,可供具有初、中级英语水平的广大读者学习参考。

«GENERAL SCIENCE»

(Tapescript)

Muriel Higgins

Longman Group Limited, London

First Published 1978

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科 技 英 语 丛 书

通 俗 科 学

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Introduction

1.

Each unit in this tapescript corresponds to the unit of the same number in *Nucleus General Science*. Tape units have two main sections: *drills*, which emphasise the production by the student of the structures and vocabulary of the unit, and *listening practice*, which gives the student practice in listening to the material of the unit and understanding it.

2. Drills

Every drill has a direction at the beginning: *After section 1/2/3/4*. This refers to the sections in the units of *Nucleus General Science*. Laboratory or tape work should follow the completion of a section in class, and students should not be expected to work with the tape before the material has been done in class.

Drills are three-phase: each item consists of the cue or stimulus (labelled Q in the tapescript), followed by a pause for student response, followed by the correct answer on tape (labelled A). It should be noticed that the labels Q and A are used throughout for stimulus and response, and not only for actual question and answer sequences.

Drills always have examples, usually two, with a further example if a new but related type of response is introduced later in the same drill. The student listens to the examples without saying anything; then the examples which he has just heard form the first and second items in the drill.

3. Listening Practice

The listening practice material follows the drills on the tape, and it is expected that this will be the final piece of work on tape to complete the unit.

Listening practice material in the units which are followed by the Revision Units A, B and C sometimes relates to material in the Revision Unit. In this case the relevant part of the revision unit should have been completed in class before students start tape work.

The listening practice material is also three-phase, with a space for the student response after the cue, and then the correct answer. Since the main emphasis here is on comprehension, not production, many answers are one or two words (yes/no, true/false), phrases or part-sentences only.

In the listening practice no examples are given. The exercises are in general longer than the drills, with more items, so the student has time to work out what is required from the first few items.


4. Spoken instructions to the student

In the *drills*, instructions have been kept as simple and as uniform as possible. The standard instructions are:

Listen to these examples

Now you do the same

Where the student needs to refer to the textbook (shown in the *Contents*

and beside individual drills by the symbol , the instruction is:

Look at the picture/graph/diagram etc. in exercise 00 on page 00 of your/the book, and listen to these examples

If a second pattern is introduced during the drill, a student hears:

Now listen to this new example

(Now) listen again

Some drills, mostly in the later units, finish with one or two more open-ended items, where the student is asked to give his own answer. Usually in this case no answer is given on the tape. Here the instruction is:

Now answer this if you can

Answer this yourself

Give your own answer to this question

In some cases, particularly where the student is asked to refer to the book, he will need time to find an answer or to formulate it. Then, at the beginning of the drill he hears:

Stop your machine if you need time to think

(See paragraph 6 below for the control of the pause button in dubbing or broadcast use.)

The *listening practice* material asks the student to perform a variety of tasks, and for this reason the instructions vary rather than being standard as in the drills. However there are several instructions which occur frequently:

Stop your machine if you need time to think/write/find the answer etc.

You need a pencil and a piece of paper for this

Now check your answers by . . .

These sets of instructions also occur:

Listen to . . . and then you will be asked some questions/and then answer the questions

Listen to this passage about . . . and make notes about . . ./and note . . .

Look at (page, exercise) and follow what is said. When you hear this signal (bleep, appears in written form as **), look up from your book and answer the question

It is suggested that the teacher ensures that students know what is expected of them by going over instructions in class before students start tape work. If necessary, students could be given a list of the instructions with translations into their own language.

5. Preparation for tape work

If the relevant section of the textbook has been completed before students begin work on the tape, the material on tape will be familiar. However it is suggested that the teacher should look through the tapescript

before sending his students into the laboratory in order to identify any areas of special difficulty. In some cases the teacher might think it was a good idea to do some preparation of the taped material with students in class beforehand. Similarly, if the teacher on reading through the tapescript finds some words which students may not know (marked V -- see paragraph 8 *Symbols* below) these can be explained or translated in advance. In many cases it will be found that the meaning of such words can be inferred from the context in which they occur, and students should be encouraged to make intelligent guesses.

6. Tapes in laboratory use

There are two main ways of using tapes in a language laboratory: i) they can be *dubbed*, or pre-copied, on to the tapes at student positions in the laboratory ii) they can be *broadcast* from the control console so that student machines are recording as the tape is heard.

With dubbed or pre-recorded tapes, each student works through at his own speed, and is able to use his pause button whenever he hears *Stop your machine if . . .*, or indeed at any time he wants.

When tapes are being broadcast, the monitor at the console has to control pausing: whenever he hears *Stop your machine if . . .* he must pause the master tape to allow as much thinking time as he considers necessary. On a second run through, students could then operate their individual pause buttons if they need yet more time.

It is clear that use of dubbed tapes is more satisfactory, as then each student can move ahead at his own speed whenever he is ready.

7. Tapes in classroom use

The tapes can of course be used with a tape recorder in class if a language laboratory is not available. This is another kind of *broadcast* use. Responses will be chorused or given individually by students indicated by the teacher. Extra pausing is controlled by the teacher's operation of the pause button whenever necessary.

8. Symbols

These symbols appear in the tapescript:



student has to refer to *Nucleus General Science*



pause button must be operated in this exercise (of course the teacher can also choose to add extra, or longer pauses *at any point* where he thinks it necessary)

+

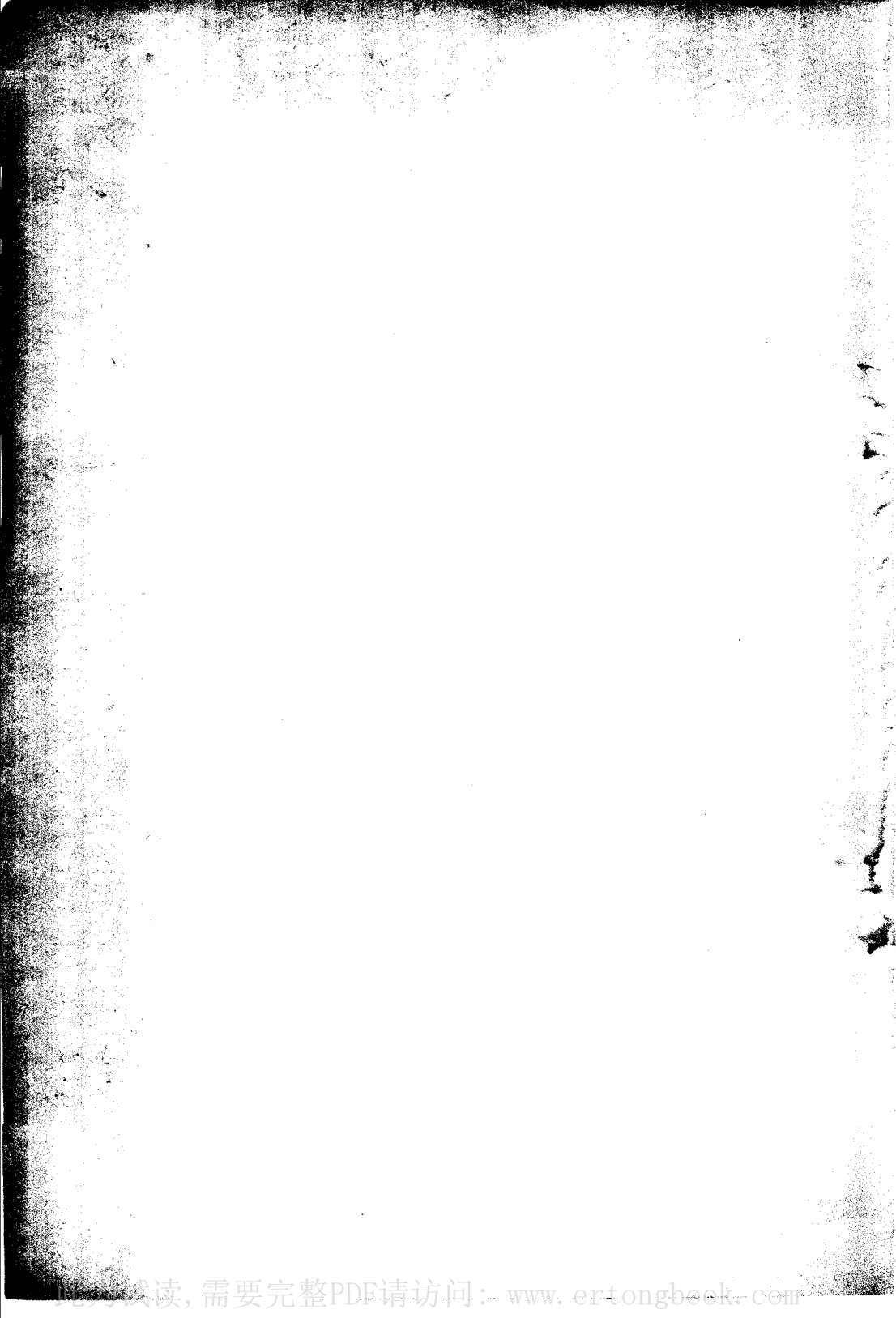
instruction

**

bleep on tape; occurs in listening practice with the meaning *Look up from your book and answer the question*

V

vocabulary item or items in this line may be difficult; teacher should check beforehand, and if an item is unfamiliar, it should be explained before students start tape work. Items which have occurred in *Nucleus General Science* are considered to be 'known' and are therefore *not* marked with a V



Unit 1

After section 1

1.1 Aim To practise *has + diagonal etc. line*

+ Listen to these examples

1. Q: Has the letter N one diagonal line or more than one?

A: It has one diagonal line.

2. Q: Has the letter U one vertical line or two?

A: It has two vertical lines.

+ Now you do the same

1. as first example

2. as second example

3. Q: Has the letter C one curved line or more than one?

A: It has one curved line.

4. Q: Has the letter L one vertical line or two?

A: It has one vertical line.

5. Q: Has the letter E one horizontal line or two or three?

A: It has three horizontal lines.

6. Q: Has the letter A one diagonal line or two?

A: It has two diagonal lines.

7. Q: Has the letter R one curved line or two?

A: It has one curved line.

After section 1

1.2 Aim To practise adjectives like *circular*

+ Listen to these examples

1. Q: Is a wheel shaped like a circle?

A: Yes, a wheel is circular.

2. Q: Is a flag shaped like a rectangle?

A: Yes, a flag is rectangular.

+ Now you do the same

1. as first example

2. as second example

3. Q: Is a protractor shaped like a semi-circle?

A: Yes, a protractor is semi-circular.

4. Q: Is a chessboard shaped like a square?

A: Yes, a chessboard is square.

5. Q: Is a set-square shaped like a triangle?

A: Yes, a set-square is triangular.

6. Q: Is a notebook shaped like a rectangle?

A: Yes, a notebook is rectangular.

7. Q: Is a coin shaped like a circle?

A: Yes, a coin is circular.

After section 1

1.3 Aim To practise *They are both circular etc.*

+ Listen to these examples

1. Q: How is a record like a coin?

A: They are both circular.

V 2. Q: How is a delta like a set-square?

A: They are both triangular.

+ Now you do the same

1. as first example

2. as second example

3. Q: How is a door like a window?

A: They are both rectangular.

4. Q: How is a half-moon like a protractor?

A: They are both semi-circular.

5. Q: How is a handkerchief like a chessboard?

A: They are both square.

6. Q: How is a plate like a wheel?

A: They are both circular.

After section 2

1.4 Aim To practise *spherical* etc. in shape



+ Look at the pictures in exercise 6 on page 4 of your book, and listen to these examples

1. Q: A ball is shaped like a sphere.

A: It is spherical in shape.

2. Q: A test-tube is shaped like a cylinder.

A: It is cylindrical in shape.

+ Now you do the same

1. as first example

2. as second example

3. Q: A funnel is shaped like a cone.

A: It is conical in shape.

4. Q: A flask is shaped like a sphere.

A: It is spherical in shape.

5. Q: A salt-crystal is shaped like a cube.

A: It is cubic in shape.

6. Q: A pencil is shaped like a cylinder.

A: It is cylindrical in shape.

7. Q: A volcano is shaped like a cone.

A: It is conical in shape.

After section 2

1.5 Aim To practise adjectives like *egg-shaped*

+ Listen to these examples

1. Q: Which of these fruits can we call egg-shaped:
a banana, an apple, a lemon?

A: A lemon is roughly egg-shaped.

2. Q: Which part of a plane can we call cigar-shaped: the body, the tail, the wings?

A: The body is roughly cigar-shaped.

+ Now you do the same

1. as first example

2. as second example

3. Q: Which of these can we call V-shaped: a mountain, a desert, a valley?

A: A valley is roughly V-shaped.

4. Q: Which of these can we call disc-shaped: a plate, a cup, a bottle?

A: A plate is roughly disc-shaped.

V 5. Q: Which of these can we call wedge-shaped: a car, a boat, a tent?

A: A tent is roughly wedge-shaped.

6. Q: Which of these can we call pear-shaped: a light bulb, a window, a test-tube?

A: A light bulb is roughly pear-shaped.

After section 3

1.6 Aim To practise opposites like *brittle/tough*

+ Listen to these examples

1. Q: Glass breaks easily.

A: Yes, it's brittle.

Q: But steel doesn't.

A: Steel is tough.

2. Q: Glass is difficult to scratch.

A: Yes, it's hard.

Q: But chalk isn't.

A: Chalk is soft.

+ Now you do the same

1. as first example

2. as second example

3. Q: Rubber bends easily.

A: Yes, it's flexible.

Q: But concrete doesn't.

A: Concrete is rigid.

4. Q: Ice produces little friction.

A: Yes, it's smooth.

Q: But sandpaper produces a lot of friction.

A: Sandpaper is rough.

5. Q: Wood burns easily.

A: Yes, it's combustible.

Q: But stone doesn't.

A: Stone is non-combustible.

After section 3

1.7

Aim To practise *it is/they are* + adjective

+



Complete the table in exercise 13 on page 10 of your book. The table tells you the first three answers. Listen to this example first



1. Q: How is glass different from the other materials?

A: It is transparent, they are opaque.

+

Now you do the same. Stop your machine if you need time to think

1. as example

2. Q: How is rubber different from any of the other materials?

A: It is flexible, they are rigid.

3. Q: How is sugar different from any of the others?

A: It is soluble, they are insoluble.

+

Now answer these if you can

V

4. Q: How is cotton different from terylene and nylon?

A: It is natural, they are synthetic.

5. Q: How is nylon different from cotton and wool?

A: It is synthetic, they are natural.

6. Q: How is whisky different from water and milk?

A: It is alcoholic, they are non-alcoholic.

7. Q: How is orange-juice different from beer and wine?

A: It is non-alcoholic, they are alcoholic.

Listening Practice

1.LP1

Aim To recognise and relate properties and shapes

+



Listen to this description of an object. Then you will be asked some questions about it. Stop your machine if you need time to think

This object is shaped like a long cylinder, and in cross-section it is circular. It is rigid. One end is tapering, and has a black point.

1. Q: What shape is the object?

A: Cylindrical.

2. Q: What shape is the cross-section?

A: Circular.

3. Q: Is the object flexible?

A: No, it is rigid.

4. Q: Describe the shape of one end.

A: Tapering.

5. Q: What colour is the point?

A: Black.

6. Q: What is the object?

A: It's a pencil.

+ Now listen again

This object is disc-shaped, with a small hole in the centre. It is made of plastic, so it is tough and flexible. The colour is usually black.

7. Q: What shape is the object?
A: Disc-shaped.
8. Q: What material is it made of?
A: Plastic.
9. Q: Give the two property adjectives which you heard.
A: Tough and flexible.
10. Q: What is this object?
A: It's a record.

1.LP2 Aim To recognise general and particular statements, and explanations

+ Listen, and then answer the questions

Glass has many useful properties. For example it is hard — difficult to scratch; it is rigid — it does not bend easily; and it is transparent — you can see through it.

1. Q: What material are we talking about?
A: Glass.
2. Q: Give three useful properties of glass.
A: It is hard, rigid and transparent.
3. Q: Which word means *difficult to scratch*?
A: Hard.
4. Q: Which word means *you can see through it*?
A: Transparent.

+ Listen again

But glass is not a tough material, in fact it is very brittle.

5. Q: Which word means *not tough*?
A: Brittle.

+ Listen

Sometimes glass is made specially tough, and this glass is used for example in car windows.

6. Q: Where is specially tough glass used?
A: In car windows.

+ Listen

Unlike glass, wood is a soft material. It is easy to scratch wood and to cut it.

7. Q: What material are we talking about now?
A: Wood.
8. Q: Which word means *easy to scratch and to cut*?
A: Soft.

+ Listen

Wood is a good material for building, but it is combustible -

it burns easily. It is therefore more dangerous than other building materials which are non-combustible, for example stone and concrete.


9. Q: Finish this sentence with one word: *Wood is a good material for building, but it is ...*
A: Combustible.
10. Q: Give two examples of non-combustible building materials.
A: Stone and concrete.

Unit 2

After section 1

2.1 Aim To practise prepositions which show position

+ Look at the diagram in exercise 2 on page 11 of your book.

 Listen to these examples

1. Q: Where is the square in relation to the triangles?
A: The square is between the triangles.
2. Q: So where are the triangles in relation to the square?
A: The triangles are on either side of the square.

+ Now you do the same

1. as first example
2. as second example
3. Q: Where is the circle in relation to the square?
A: The circle is above the square.
4. Q: So where is the square in relation to the circle?
A: The square is below the circle.
5. Q: Where is the star in relation to the triangle?
A: The star is diagonally above the triangle.
6. Q: So where is the triangle in relation to the star?
A: The triangle is diagonally below the star.

After section 1

2.2 Aim As preceding drill

+ Look at the table at the top of page 12. Find silver. It's in the middle row, second column from the right. Listen to these examples



1. Q: Give the position of silver in relation to gold.
A: Silver is vertically above gold.
2. Q: In relation to cadmium.
A: Silver is to the left of cadmium.

+ Now you do the same

1. as first example
2. as second example
3. Q: In relation to copper.
A: Silver is vertically below copper.