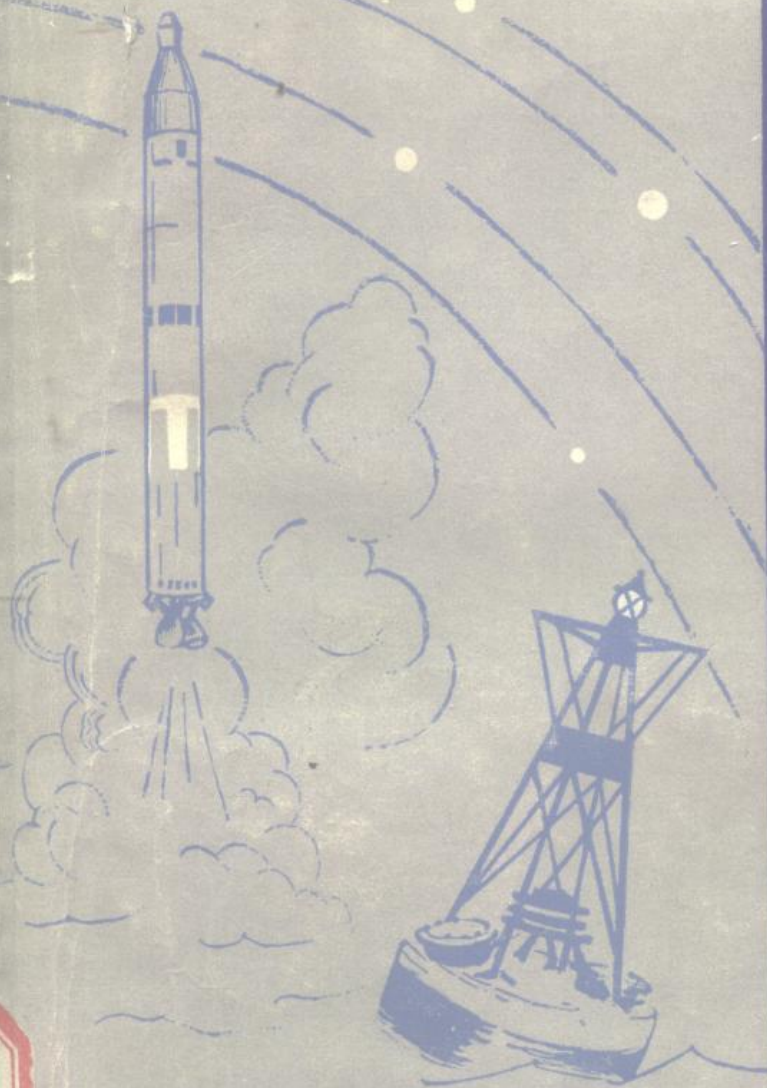


# 英语科 普阅读 文选



## SCIENCE READINGS

上海译文出版社

11

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英语科普阅读文选

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《英语科普阅读文选》编写组编

葛传槩 审阅

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封面设计：陆荣官

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## 编 选 说 明

为了适应广大读者学习英语的需要，并为高等学校理科一、二年级学生提供一些课外阅读材料，我们选编了这套《英语科普阅读文选》。

本书文章全部选自新近出版的英、美书刊。所选文章力求内容新颖有趣，文字生动活泼，题材、体裁多种多样。为了帮助读者阅读和理解，每篇文章后面列出生词表，并对文中的习惯用法、较难的句子结构和语法现象，作了必要的注释。这套书共分三册，第一册的生词和注释以复旦大学主编的高等学校理科《英语》教材第二册为基础。生词的注音根据丹尼尔·琼斯的《英语正音词典》（第十三版）；英、美拼法不同的单词不求统一，依据文章来源而定。

本书由复旦大学丰华瞻、王沂清、周惠麟，华东师范大学徐小鲁，中山大学顾敏渊，上海科学技术大学沈子文、毛雪华和上海师范学院胡瑞璋选编。由于我们水平有限，缺点和错误在所难免，热忱希望读者批评指正。

本书承复旦大学葛传棻教授审阅，特此表示感谢。

编 者

1980年1月

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## 1. The Size of the Universe

The earth seems big to us, but it is only one particle floating along with countless other particles in space.<sup>1</sup> Our sun is another such particle. It is only a large star at the edge of our galaxy, the Milky Way. Nine small planets and about 2,000 smaller bodies all revolve round it in a fixed order. There are many stars larger and brighter than the sun in the Milky Way. There are also many millions of galaxies in the universe as big as, or bigger than, the Milky Way.<sup>2</sup> The distance from the earth to other bodies in space is measured by astronomers in light years, that is, the distance (5.88 million million miles) that light travels in one year.<sup>3</sup> The farthest galaxies are more than 2 billion (2 million million) light years away from the earth. Each galaxy is made up of<sup>4</sup> millions of stars and satellites. There are vast distances between one galaxy and another.

### Glossary

size	/saiz/ <i>n.</i>	大小, 规模
float	/flaʊt/ <i>vi.</i>	飘浮, 浮动

along /ə'lon/ <i>ad.</i>	一起
countless /'kauntlis/ <i>a.</i>	无数的,多得不计其数的
body /'bɒdi/ <i>n.</i>	物体
fixed /fiks/ <i>a.</i>	固定的;确定的,不变的
astronomer /əs'trɒnəmə/ <i>n.</i>	天文学家
vast /vɑ:st/ <i>a.</i>	巨大的,庞大的

### Explanatory Notes

1. The earth seems big to us, but it is only one particle floating along with countless other particles in space.  
 在我们看来,地球似乎是巨大的,但它只不过是在太空中飘浮着的,多得数不清的微粒中的一颗而已。

1) floating 是动词 float 的现在分词形式。floating along with ... in space 是现在分词短语,在句中作定语,修饰 particle。

2) along with 作“与……一道,和……一起”解,along with 比单用 with 的语气强。

2. There are also many millions of galaxies in the universe as big as, or bigger than, the Milky Way.  
 在宇宙中还有好几百万个同银河系一样大或者更大的星系。

as ... as 作“象……一样,如……一样”解。

3. The distance from the earth to other bodies in space is measured by astronomers in light years, that is, the distance (5.88 million million miles) that light travels in one year.

天文学家用光年,即光在一年内所传播的距离(计 5.88 万



亿英里) 为单位来测量地球与太空中其他星球之间的距离。

- 1) in light years 中的介词 in 表示单位,作“以”解。
  - 2) that is 作“即”解,在句中是插入语,有时略作 i. e. (=id est)。
  - 3) the distance (5.88 million million miles) that light travels in one year 是 light years 的同位语。that 是关系代词,引导定语从句,修饰 distance。that 在从句中作 travels 的宾语。
4. be made up of: 由……组成

## 2. The Stages of a Rocket

Big rockets are built in several pieces. These are called stages. Usually rockets have two or three stages. Rockets with more than one stage are called step rockets.<sup>1</sup> They end up going much faster than rockets with only one stage.<sup>2</sup>

There are two ways of making step rockets.<sup>3</sup> One is to put the stages one on top of another.<sup>4</sup> The stages get smaller towards the top.<sup>5</sup> The biggest stage of all is at the bottom. It gives the first big push to get all the stages off the ground.<sup>6</sup> It is thrown away only minutes after the rocket takes off.<sup>7</sup>

The other way to make step rockets is to put the stages side by side<sup>8</sup> at the bottom. This makes the rocket short and wide. As the rocket goes up<sup>9</sup>, some of the rockets at the side fall away.

If the rocket is taking a satellite or people into space, they sit right on top of the rocket. Their part is much smaller than the other stages. But the big stages are only there to get the tiny top part into space.

## Glossary

stage /steɪdʒ/ <i>n.</i>	级
several /'sevrəl/ <i>a.</i>	几个, 数个(至少三个)
piece /pi:s/ <i>n.</i>	段
step /step/ <i>n.</i>	(梯)级
end /end/ <i>vi.</i>	结束; 终止
top /tɒp/ <i>n.</i>	顶, 顶端; 上面
get /get/ <i>vi.</i>	变得; 逐渐……起来
<i>vt.</i>	使得
push /puʃ/ <i>n.</i>	推动, 推进
wide /waɪd/ <i>a.</i>	宽阔的
right /raɪt/ <i>ad.</i>	正好, 恰恰

## Explanatory Notes

1. step rocket: 多级火箭
2. They end up going much faster than rockets with only one stage.  
结果, 多级火箭要比单级火箭快得多。
  - 1) end up 作“结束”解。
  - 2) going 是动词 go 的现在分词形式, going much faster ... stage 是现在分词短语, 作状语, 修饰 end up.
3. There are two ways of making step rockets.  
制造多级火箭有两种方法。

making 是动词 make 的动名词形式, making step rockets 是动名词短语, 作介词 of 的宾语。

4. One is to put the stages one on top of another.

一种方法是一级一级地接起来。

1) 句中两个 one 都是代词,前一个指制造火箭的一种方法,后一个指火箭的一级。

2) one on top of another 是名词短语,作状语,修饰 put,其中 on top of 作“在……之上”解。

5. The stages get smaller towards the top.

火箭的级越往顶端越小。

这里的 get 是连系动词,作“变得”解,smaller 是表语。

6. It gives the first big push to get all the stages off the ground.

它(最大的一级火箭)产生巨大的启动力,使整个火箭离开地面。

句中的 get 是及物动词,all the stages 是宾语,介词短语 off the ground 是宾语补足语。get 在这里作“使得”解。

7. take off: (飞机等)起飞;离开

8. side by side: 肩并肩;并排

9. go up: 上升

### 3. Mathemagic

What you do

1. You write down<sup>1</sup> any number less than 99 (say 23)<sup>2</sup> on a piece of paper;<sup>3</sup> fold it, and hand it to your friend, telling him not to look at it.<sup>4</sup>
2. Tell him to write down any number between 50 and 100 without letting you see it.<sup>5</sup>
3. You subtract the number you wrote on the piece of paper (23) from 99 mentally,<sup>6</sup> and tell your friend to add 76 to<sup>7</sup> his number.
4. Tell him to cross off<sup>8</sup> the first number and add it to the result.
5. Now tell him to subtract his result from the original number and look at the folded piece of paper<sup>10</sup> you gave him.

What your friend does

23

He writes 86 76

He adds: 
$$\begin{array}{r} 86 \quad 76 \\ + 76 \quad \underline{71} \\ \hline 162 \quad 147 \end{array}$$

He does so:<sup>9</sup> 
$$\begin{array}{r} 162 \quad 76 \\ + 1 \quad \underline{1} \\ \hline 63 \quad 48 \end{array}$$

He subtracts: 
$$\begin{array}{r} 86 \quad 76 \\ - 63 \quad \underline{-63} \\ \hline 23 \quad 23 \end{array}$$

Of course, this trick can be worked with higher numbers, too. You can ask the victim to write down any number between 200 and 1,000. In this case,<sup>11</sup> the number you write on the folded paper must be between 100 and 200, and the number you subtract from in the third step must be 999, instead of<sup>12</sup> 99.

### Glossary

mathemagic /,mæθi'mædʒɪk/ <i>n.</i>	数学魔术
fold /fəʊld/ <i>vt.</i>	折叠
subtract /səb'trækt/ <i>vt.</i>	减, 减去
mentally /'mentli/ <i>ad.</i>	在内心
cross /krɒs/ <i>vt.</i>	在……上打叉
original /ə'ri:dʒɪnəl/ <i>a.</i>	原先的
trick /trɪk/ <i>n.</i>	戏法
victim /'vɪktɪm/ <i>n.</i>	牺牲者; 受骗者
case /keɪs/ <i>n.</i>	情况
instead /ɪn'sted/ <i>ad.</i>	代替

### Explanatory Notes

1. write down: 写下, 记下

2. (say 23): (比如说23)

这里的 say 作“比如说”解。

3. a piece of paper: 一张纸

paper 作“纸”解时, 是不可数名词, 不能直接用数

字修饰。“一张纸”要说 a piece (或 sheet) of paper,  
“两张纸”要说 two pieces of paper。

4. ... telling him not to look at it.

……告诉他不要看这张纸。

not to look at it 是动词不定式的否定结构。注意 not 加在 to 的前面。

5. ... without letting you see it.

……不让你看到它。

letting 是动词 let 的动名词形式, letting you see it 是动名词短语,作介词 without 的宾语。

6. You subtract the number you wrote on the piece of paper (23) from 99 mentally.

你心中算出 99 减去你写在纸上的数目 23。

1) subtract A from B: B 减 A

2) you wrote on the piece of paper 是省略了关系代词 that (或 which) 的定语从句,修饰 number。

7. add ... to: 把……加在……上

8. cross off: 划掉

9. He does so. 他这样做了。

does so = crosses off the first number and adds it to the result

10. the folded piece of paper: 折迭的纸

folded 是动词 fold 的过去分词形式,作定语,修饰 piece of paper。

11. in this case: 假使这样的话

12. instead of: 代替,而不是

instead 和 of 连用,作介词。

## 4. Light

Light is necessary for sight. Man has studied light for many centuries. We know of two forms of light: artificial and natural.<sup>1</sup> Natural light comes from the sun. We can use this only during the daytime. Because we were not satisfied with<sup>2</sup> the daylight hours, we found artificial sources of light. Probably the first source of artificial light was fire. Many other sources have been used through the ages. Fire was the source when people used oil lamps, candles, and gas lamps. Today we use electric lights of many types.

Artificial and natural light play an important part in<sup>3</sup> our lives. In painting color schemes are planned according to the light received.<sup>4</sup> Houses are planned to make more use of natural light. Lighting systems for homes, offices, and manufacturing plants are planned for best vision. With good and proper light comes maximum efficiency.<sup>5</sup>

### Glossary

artificial /,ɑ:tɪ'fiʃəl/ *a.*

人工的, 人造的

daylight /'deɪlaɪt/ *n.*

白昼; 日光



source /sɔ:s/ <i>n.</i>	来源;根源
fire /faɪə/ <i>n.</i>	火
candle /'kændl/ <i>n.</i>	蜡烛
type /taɪp/ <i>n.</i>	型,类型;式
play /pleɪ/ <i>vt.</i>	扮演;玩
painting /'peɪntɪŋ/ <i>n.</i>	绘画
color /'kʌlə/ <i>n.</i>	颜色;色彩
<i>vt.</i>	给……着色
scheme /ski:m/ <i>n.</i>	计划;调配
plan /plæn/ <i>vt.</i>	计划;设计
office /'ɒfɪs/ <i>n.</i>	办公室
manufacturing /,mænju'fæktʃəriŋ/ <i>a.</i>	制造的,生产的
vision /'vɪʒən/ <i>n.</i>	视,视力,视觉
proper /'prɒpə/ <i>a.</i>	合适的,适当的
maximum /'mæksɪmə/ <i>a.</i>	最大的,最高的
<i>n.</i>	最大量,最大数
maxima /'mæksɪmə/ <i>n. pl.</i>	
或 maximums	
efficiency /i'fɪʃənsi/ <i>n.</i>	效率,效果

### Explanatory Notes

1. We know of two forms of light: artificial and natural.

我们知道有两种光:人造光和自然光。

know of 作“知道(听说过)”解,表示对某人或某事物知道一些,即有些片面的间接的知识。又如:

I don't know the scientist, but I know of him.

我不认识这位科学家,但我知道他。