英語數学辅导材料

(根据北京大学杜秉正等编的《英语》教材编写)

第三册





第三册

(下列第一课至第**六课包括**) 练习。第七课至二十课包

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第三册

第一课

月球探险者

我们不认为月球上有任何生命。月球是一个完全死寂的世界,是一片多山的不毛之地。那里,白天受到太阳灼热的照射;而在漫漫的长夜里,凛冽的严寒又远非地球上所经历得到的。

然而,现在月球探险者可以乘火箭登上月球。他们必须穿上密封的服装,并且需要备有氧气装置以供呼吸。他们的服装必须是完全防弹的,因为他们有被流星击中的危险。普通流星,或称陨星,给人以一种星星从天而降的强烈印象。(其实)这种流星只是物质的小碎片,通常比豌豆还小,往往并不比一粒沙子大。太空并不是空荡荡的,而是充满着许许多多这样的碎片。这些碎片以比步枪子弹还要快许多倍的速度进入大气层。陨星穿过空气时,由于摩擦而变得炽热,因而,它通常在穿到离地面不到二十英里的距离之前,便全部气化了。一天当中有数以百万计的这种碎片进入我们的大气层,但是大气层保护我们免受流星碎片的伤害。然而,在月球上,这种碎片会坠落到月面上,其数量又是如此之多,使得月球探险者面临着被击中的巨大危险。

月球探险者所遇到的困难比起努力攀登珠穆朗玛峰的人所 遇到的要大得无法相比。月球探险者只是在两个方面比较有 利:首先,因为月球的重量只相当于地球重量的八十分之一左 右,月球的引力并不很大,所以在月球上活动不那么使人感到疲劳; 其次,月球探险者不需要和狂风作斗争,这是他们比攀登珠穆朗玛峰的运动员有利的第二个方面。既然月球上没有大气层,也就不会有风:当然,也就不会有嘈杂的声音,因为声音是靠空气传播的。月球是一个万籁无声的,被绝对寂静所笼罩的世界。

课文注释

1. 问:课文第一段第二句怎么分析?

答: It is a world that is completely and utterly

dead, a sterile mountainous waste on which

during the day the sun blazes down with great
(3)

heat, but where during the long night the cold

is so intense that it far surpases anything ever

(5)

experienced on the earth.

- (1)定语从句修饰 world,(2)world 的同位语(3)(4)由 并列连词 but 相连, 都是定语从句修饰 waste,(5)与 so 同用, 作为结果状语从句, 其中ever experienced on the earth是过去分词短语当定语,修饰anything.
- 问: 第二段第四句怎么分析?
 答. The average shooting star or meteor, which

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gives so strongly the impression of a star

falling from the sky, is a small fragment of

matter usually smaller than a a pea and often

no larger than a grain of sand.

(5)

整句句子的主语是 the average shooting star, meteor 是它的同位语, 谓语是 is a small fragment of matter。(1)非限制性定语从句修饰 shooting star or meteor.(2)带逻辑主语的动名词结构作介词 of 的 宾语。(3)(5)二个由 and 并列连接的形容词短语修饰 fragment of matter,(4)(6)比较状语从句。

- 3. 问: 为什么上句中 the impression of a star falling from the sky 的 of 后面应看作是带逻辑主语的动名 词短语,能否把 falling from the sky 看成是 star 的 定语呢?
 - 答:上句中我们强调的 impression是"星星从天而降的印象"是强调主谓关系的事实,不可把 falling from the sky 看成定语,否则意思就不同,成了"从天而降的星星的印象"。
- 4. 问: not larger than a grain of sand与no larger than a grain of sand有什么不同?
 - 答: not larger than a grain of sand 是一般的形容词 比较级的否定形式,意为不比沙粒大。no larger than a grain of sand 的语气较强, no 将其后面的成分全

部否定了,因此, no larger than 相当于 as small as. 沙粒不大,碎片也不大。"碎片小得象沙粒一样" 例如.

(1) Jack is not taller than Tom.

杰克不比汤姆个子高。

Jack is no taller than Tom.

(杰克不高, 汤姆也不高,)杰克的个子不比汤姆的 个子更高。

(2) This lesson is not more difficult than that one.

这课课文不比那课课文难。

This lesson is no more difficult than that one.

这课课文不比那课课文更难,(这课课文不难,那课 课文也不难)

5. 问。第二段第六句如何分析?

答. The earth, in its travelling around the sun, (1)

meets many of these fragments, which enter

the atmosphere at a speed many times greater (2)

(3)

than that of a rifle bullet.

(4)

整句句子的主语是 the earth, 谓语和宾语是 meets many of these fragments,(1)介词短语作状 语, its travelling around the sun 是带逻辑主语的 动名词短语,作介词宾语。(2)非限制性定语从句修饰many of these fragments,其中at a speed介词短语作状语,修饰从句谓语动词 enter,(3)形容词短语修饰 speed.可看作前面省略了 which is.(4)比较状语从句,其中 that 是替换词,代替 the speed.

6. 问。第二段第七句怎么分析?

答: The meteor, rushing through the air, becomes

intensely heated by friction and is usually

completely vapourised before it has penetrated

(4) (5)

within a distance of twenty miles from the

surface of the Earth.

(1)主语 (2)是现在分词短语当状语 (3)(4)是并列的两个谓语,都是系表结构, heated 和 vapour ised 是过去分词当表语 (5)是时间状语从句,其中介词短语within a distance of twenty miles 是状语,修饰has penetrated, from the surface of the earth 是定语修饰 twenty miles.

7. 问。第三段第一句怎么分析?

(1)

答: The difficulties that the lunar explorers have

to encounter are incomparably greater than
(3)
(4)

(2)

(5)

to reach the summit of Mount Jolmo Lungma.

- (1)主语 (2)限制性定语从句修饰 difficulties,(3)谓语 (4)比较状语从句, those 作为代词代替difficulties, (5)限制性定语从句修饰 those, 其中介词短语 in the endeavour …作状语, to reach …不定式短语作定语,修饰 endeavour。
- 8. 问: 在带逻辑主语的动名词结构中,名词所有格应怎样使用? 本课中有哪些这样的结构?
 - 答: (1) 在带逻辑主语的动名词结构中,如果逻辑主语是名词,在句首则必须用所有格,如不在句首,可用所有格,也可用普通格,例如,

Edison's being boxed at the ear was the direct cause of his deafness.

爱迪生挨了耳光是造成他耳聋的直接原因。

I just can't believe Jack's(Jack) coming out first.

我真不能相信杰克得第一名。

(2) 如果逻辑主语是代词,如不在句首,一般情况下仍用所有格。例如本课中的 its travelling around the sun, for their breathing,但在现代英语中使用普通格的情况也越来越多了。例如:You don't mind my (me) staying here?你不介意,我呆在这儿吧?

Because of its (it) travelling more slowly, the sound trails behind the flash.

由于声音传播较慢,所以它总落后于闪光。

注意, ① 如果动名词逻辑上的主语是无生命的东西, 就只能用普通格, 例如: 本课中 the impression of a star falling from the sky; because of sound being carried by the air

如果在句首,则用介词短语形式表示。例如: 我们不说 Oxygen being separated from the air is difficult.

我们说 The Separation of oxygen from the air is difficult.

氧从空气中分离开是很难的。

② 应该指出,在一定场合,使用带逻辑主语的动名词结构能简化句子,不必使用从句。例如, because of sound being carried by the air 相当于从句 because sound is carried by the air.

补充练习

I. 根据课文回答问题:

- 1. Are the conditions on the moon the same as those on the planet where we live?
- 2. Why is it not possible for us to admit that there is life of any sort on the moon?
- 3. How can the lunar explorers land on the

moon?

- 4. Why, on the moon, must the lunar explorers be encased in airtight suits and provided with oxygen apparatus?
- 5. Why must their suits be bullet proof?
- 6. Apart from the impression so strongly given of a star falling from the sky, what is a meteor in fact?
- 7. What happens to the earth in its travelling around the sun?
- 8. Since so great a number of fragments enter our atmosphere during a day, why are people on earth not hit by them?
- 9. In what respects do the lunar explorers have the advantage over the climbers on Mount Jolme Lungma?
- 10. Why, according to the text, is the moon a world completely still?

I. 选择正确的答案:

- 1. We'll have to find another way to get oxygen because of _____ to be separated from the air.
 - A. its being difficult B. it difficult
 - C. being difficult
 - D. oxygen's being difficult
- 2. Now we are considering ____ there with you.

A. he going B. his being gone
C. his going D. him gone
3 the train cost him a great deal.
A. He missing B. His missing
C. He missed D. Him missing
4 with oil is impossible.
A. Water being mixed
B. Water's being mixed
C. The mixture of water
D. Water mixing
5here yesterday was really something
unexpected.
A. Comrade Wang coming
B. Comrade Wang's coming
C. Comrade Wang's being come
D. Comrade Wang being come
■ . 用适当的介词填充:
1. It's a sterile mountainons waste
which the day the sun blazed down
great heat.
2. They have to be encased airtight suits
and provided oxygen apparatus
their breathing.
3. They are danger being hit
a shooting star.
4. The meteor, rush the air, becomes
intensely heated friction and is

	vaporised	before	it ha	s penetra	ated	a	
	distance		twen	ty miles	i	the	
	surface		the Ear	th.			
5.	One advantage they have				the climbers		
	1	Mount	Jolme	Lungma	is the	absence	
		strong	wind _	t	hem to	contend	

Ⅳ. 把下列句子改为带逻辑主语的动名词结构。

- 1. I'm sure that he will be late for the trian.
- 2. He insisted that I should change the plan.
- We call these fragments shooting stars because they give so strongly the impression of stars falling from the sky.
- 4. The meteor is usually vaporised before it has penetrated within a distance of twenty miles from the surface of the Earth.
- 5. That the Chinese people invented the compass is a well-known fact to us all.

V. 把下列句子译成英语: (用动名词带逻辑主语的结构)

- 1. 我不记得他说过这些话。
- 2. 谢谢你前来帮助我们。
- 3. 爱迪生不顾生活如何艰苦,坚持做实验,使他最终终于成功。
- 4. 我们能将这化合物分离为这二种物质,因为它是由它们组成的。
- 5. 我简直不能设想他没有其他人的帮助完成了这工作。

第二课

声音是怎样传播的

地球上到处有声音,因为到处有运动,象卡车在公路上奔驰,或者象喷气式飞机隆隆地钻上天空。

有时候,声音离我们很远,而我们往往还能清楚地听得到。 我们可以听到一架喷气机在离地面远得几乎看不见的高空发出 嗡嗡的声音。

这些遥远的声音究竟是怎样传到我们的耳朵里来的呢? 这 也和运动有关。

各种声音都是以大致相同的方式传入我们耳鼓的,是以波的形式传来的,这些波只有用特殊的电子设备才能看得见。

声波大多是通过空气传入人耳的,但也可以通过水来传播。 在静止的空气里,声每秒钟内约能传播一公里。如果有风,声音 顺风传得快些,逆风则传得慢些。

声通过水比通过空气传播快得多——大约一秒钟传播一公 里半。如果通过铁,声就会以每秒五公里的速度快速传播,这过 速度约为通过空气时速度的十五倍。

我们可用一根长铁管做一个有趣的实验。用锤子敲打管子的一端。如果管子够长的话,把耳朵贴近管子的另一端时,锤子每敲一下,就会听到两个声音。声音通过铁比通过空气来得快。管子越长,通过空气听到声音就越迟。由此可知:声在不同的物质中是以不同的速度传播的。(或:声通过不同的物质其传播速度不同。)

现在我们知道,声会运动也会传播。然而,是什么样的运动使得声波开始向四面八方传送呢?

声是由振动引起的。所谓振动, 只不过是一种往复运动罢 了。

把一根橡皮筋紧紧地地绷在木板上的两颗钉子中间。当我们向后拉紧橡皮筋然后松手时,它会立即向前弹去。但在它恢复原位以前,它会迅速地来回运动多次,换句话说,它会振动。

如果仔细观察,我们就会发现这种现象可以延续几秒钟。 如果仔细听的话,我们也许能听到振动所造成的轻微的嗡嗡 声。

正是这种振动产生声波。显而易见,强烈的振动发出响亮的声音,而微弱的振动则发出低微的声音。

课文注释

- 1. 问:课文第一句怎么分析?
 - 答: Our earth is full of sound because it is full of motion, like trucks rolling along the highway or jets zooming into the sky.

这句句子的主句是 Our earth is full of sound,后面跟了一个 because 引导的原因状语从句。trucks rolling along the higher way 和 jets zooming into the sky是两个带逻辑主语的动名词结构作介词 like 的宾语。整个 like 介词短语作同位语,进一步说明 motion。

- 2. 问: "··· it is often possible for us to hear it clearly". 汶句句子中的不定式起什么作用?
 - 答: for us to hear it (指 sound) clearly 是带逻辑主

语的不定式短语作主语。

本课课文的最后一句中也有这样的用法: for strong vibrations to make loud sound and for weak vibrations to make soft sounds.是当真正的主语,句首 it 是先行词做形式主语。

- 3. 问。第二段第二句怎样分析?
 - 答: If sound passes through iron, it will speed

along five kilometers in one second, about

fifteen times as fast as through air.

(5)

- (1)条件状语从句 (2)主语 (3)谓语 (4)状语 (5) 状语 (6)比较状语从句,在 as 后面省了 it will speed along.
- 4. 问: "The longer the pipe, the later the sound will be heard through the air"这句句子是什么结构?
 - 答: 这句句子是 the more ..., the more ...的结构, 意思是"越是···就越···", 前一部分是比较状语从句, 后一部分是主句, 从句中的 be 常省略。
- 5. 问: "But what kind of movement causes sound waves to start travelling, outward in all directions? 这句句子中的不定式短语起什么作用?
 - 答: to start travelling outward in all directions是不定式短语作 sound waves 的宾语补足语。 travelling outward in all directions 是动名词短语当 start 的宾语。outward 和 in all directions是

状语,修饰 travelling.

- 6. 问: "… the elastic band will quickly move back and forth a number of times.这句句子中 a number of times 这个名词短语是 move 的宾语吗?
 - 答:不是的。在不及物动词后,往往一些名词短语用来作状语。例如课文中另一些例子:

…, it will speed along five kilometers in one second.(本课)

Molecules in a liquid can move only a very short distance.(第九课)

On every step he staggered a bit.(第二册第十二课)

补充练习

1. 根据课文回答问题:

- 1. Why is our earth full of sound?
- 2. Why is it often possible for us to hear a sound clearly even though it is far away?
- How can waves in which all sounds travel be seen?
- 4. Does sound have something to do with wind? And how?
- 5. Through what kind of material does sound travel fastest?
- 6. How do you make an experiment to show that the sound through the iron comes more quickly than that through the air?