

**新人教版 选择性必修 2**  
**Unit 1 Science and Scientists Using Language (2) :**  
**Write about what makes a great scientist**  
**导学案**

**一、单元学习主题**

人教高中英语选择性必修 2 (2019 版) **Unit 1: Science and Scientists**



**二、单元整体解读:**

本单元主题语境是“科学家和科学探究和体验”，学习科学家的科学品质和科研精神，激发学生对科学主题的兴趣。

**三、文本分析:**

有两个阅读语篇，分别题为“The Father of China’s Aerospace”“A World of Pure Thought”，它们从不同的角度简要叙述了科学家钱学森和史蒂芬霍金的经历、重要贡献、性格特点及他们所具备的科学素养。第一篇文章“The Father of China’s Aerospace”按照时间顺序概述了钱学森的一生，重点介绍了他曲折的求学报国经历，以及他回国后克服困难，在航天科技领域所做的开创性工作，文末还提及他广泛的爱好，以及这些爱好对他开展科学研究的积极影响。第二篇文章“A World of Pure Thought”重点讲述了霍金早期成名的经历，突出了他顽强地与疾病作斗争、敢于质疑、坚持梦想、勇于承认错误等可贵品质。

**四、课型解析:**

两个语篇都有效使用了一些衔接词语：however, nevertheless, because, in general, besides, furthermore, above all 等。在写作策略和技巧上，要关注语篇的衔接和连贯对学生写作能力的较高要求。阅读文本中的范例有助于学生领会、体验衔接词语的意义和作用，为他们接下来完成写作任务提供指导。

**I. 【教学目标】 Learning Objectives:**

By the end of this class, students will be able to:

1. learn about the two great scientists' lives, deeds and characters;
2. grasp and use some words and phrases describing the qualities of great scientists;
3. write a composition about a famous scientist.

**II. 【教材分析】:**

The theme of this unit is about science and scientists, while the theme of reading for writing is about the spirits of the scientists.

**III. 【教学过程】 Teaching procedures:**

**Step 1: Pre-reading**

**What makes a great scientist?**

**Step 2. Fast Reading**

The father of China's aerospace Qian Xuesen

The text is mainly about \_\_\_\_\_

Study the structure of the texts:

Paragraph 1: Introduction

Paragraphs 2-5: His personal history and accomplishments

Paragraph 6: His personality

Paragraph 7: His death and people's appreciation of him

**【设计意图】** 阅读语篇，了解文章结构和主要大意。

**【核心素养提升点】**

**学习能力:** 激活学生对科学家钱学森的知识

### Step 3. While-Reading:

Read passage 1 with the following questions.

I. True or False

1. Qian changed his major because of a shift in personal interest. ( )
2. Qian's strong interest in art has a positive impact on a scientist's development. ( )

II. Why was Qian called "the father of China's aerospace"?

#### Personal Resume/Profile

Name:

life span:

Keyword summary:

#### Education:

1. Attend schools in Beijing
2. Then Shanghai Jiao Tong University
3. in 1932
4. in 1935

#### Experiences:

1. over the course of the 1930s and 1940s
2. As a graduate assistant
3. in the 1940s
4. in 1955

#### Achievement

Under Qian's leadership

followed by

in 1970

Because much of the technology behind the Shenzhou rockets can also be traced back to Qian's research, Qian earned the name of "the father of China's aerospace."

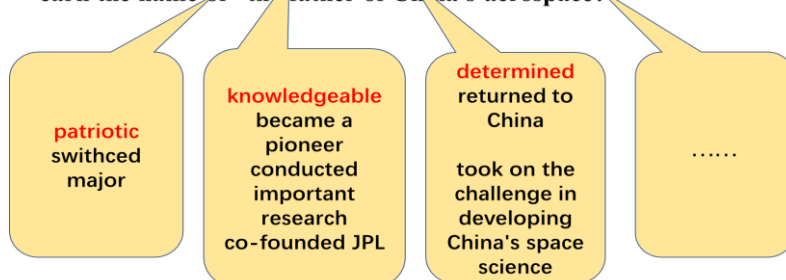
【设计意图】帮助学生抓住文章主要内容，了解钱学森的人生和经历及科研精神。

【核心素养提升点】

思维品质：学会提取关键词。

### Step 4. Post-reading:

What important personality and qualities Qian Xuesen had helped him earn the name of "the father of China's aerospace"?



### Step 5. While-Reading:

Study the structure of the texts:

Paragraph 1: Introduction

Paragraph 2: His claim to fame

Paragraph 3: Characteristics that made him great

Read passage 2 with the following questions.

I. True or False

1. When Hawking was young, almost everyone believed that the universe began with a big bang. ( )
2. Because Hawking was determined, he was able to succeed even though he was ill. ( )

II. How was Hawking's own theory proven correct?

#### Features:

Stephen Hawking was \_\_\_\_\_

His image \_\_\_\_\_  
His achievement: --- about \_\_\_\_\_  
The first was \_\_\_\_\_, which holds that \_\_\_\_\_  
The other was \_\_\_\_\_, which holds that \_\_\_\_\_

### Step 6. Post-Reading:

#### What made Stephen Hawking a genius?

II 语法填空 (根据课文内容和语法规则完成短文)

When Qian Xuesen was young, he realised China needed air force 1 \_\_\_\_\_ (defend) the country, so he went to America to study aviation. As a graduate 2 \_\_\_\_\_ (assist) at an institute, he helped conduct important research into rocket propulsion. Finally, he became a pioneer in jet and rocket technology. 3 \_\_\_\_\_ Qian Xuesen returned to China in 1955, he was put 4 \_\_\_\_\_ charge of developing China's rocket science, space and missile programme. Under his leadership, China made 5 \_\_\_\_\_ (outstand) progress in rockets, missiles and man-made satellites. Because of this, he earned the name of "the father of China's aerospace".

Stephen Hawking was a 6 \_\_\_\_\_ (gift) scientist. Since he came 7 \_\_\_\_\_ with a disease causing him unable to walk or speak, his world became one of abstract thought. There was a theory on the origin of the universe explaining the universe 8 \_\_\_\_\_ (begin) at a single point in time and space. His own work on the big bang theory was proven by astronomers with 9 \_\_\_\_\_ (telescope) and a new star was born. He was brilliant, brave and determined. And he was willing to admit his faults. This 10 \_\_\_\_\_ (combine) of his characteristics made him one of the greatest thinkers of modern times.

【设计意图】引导学生通过概述两个语篇，培养他们对语篇的概括能力。

【核心素养提升点】

语言能力：锻炼表达交流的能力

### Step 7. Summary:

How to write an essay about an outstanding figure?

basic information:

1. age, sex, birth, background
2. appearance, character
3. education
4. big events in his or her life
5. evaluation

【设计意图】具体了解其他科学家的生平和科研经历。

【核心素养提升点】

学习能力：学会对科学实验和科学精神的描述

### Step 8. Writing:

write an essay about Yuan Longpin according to the following information.

1. 1930 生于北京，自幼刻苦学习。
2. 为了解决粮食短缺问题，他选择去西南农业大学学习农业。
3. 自从 1953 年大学毕业后，他已经研究水稻几十年，一直在为世界农业默默耕耘。
4. 由于他的不懈努力，我国水稻产量快速增长，为很多国家解决了粮食的不足问题。
5. 他的最新愿望“海水水稻”也已经变为现实。
6. 他被誉为“杂交水稻之父”。
7. 虽然他很出名，但是他过着简朴的生活，不计名利。
8. 他虽然年事已高，但内心依旧年轻，依旧有不断实现自己梦想能力。

【设计意图】学习科学家袁隆平的生平和科学经历，学习他的科学精神。

【核心素养提升点】

语言能力：学会描述科学家的一生，学习他们的可贵品质。

### Step 9. Assignment:

1. write a passage to describe a great scientist.
2. write an essay about the scientific spirit.

#### 【学后反思】

1. 反思是否能描述两位科学家的品质和特点？
2. 是否能说出其他优秀科学家的事迹和经历？

#### 【板书设计 Blackboard Design】

#### Blackboard Design

Blackboard Design	<p style="text-align: center;"><b>Unit 1</b></p> <p style="text-align: center;">Using Language: The father of China's aerospace</p> <p>Introduction</p> <p>His personal history and accomplishments</p> <p>His personality</p> <p>His death and people's appreciation of him</p> <p>A world of pure thought</p> <p>Introduction</p> <p>His claim to fame</p> <p>Characteristics that made him great</p>
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