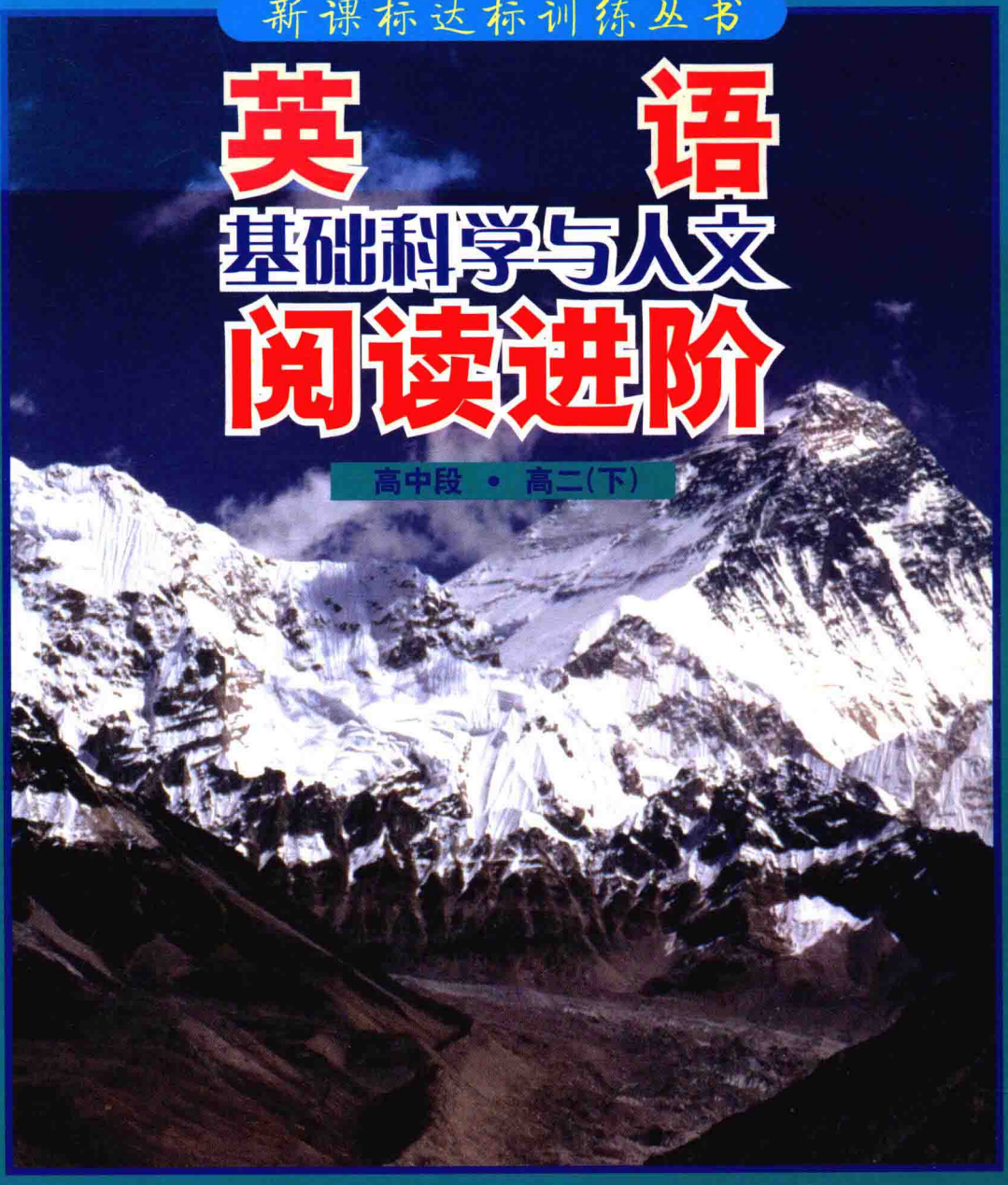
新课标达标训练丛书

英语
基础科学与人文
阅读进阶

高中段 • 高二(下)



- 精选原版美国阅读训练材料
- 紧扣学生同期学习的各科知识
- 完美实现新课程标准要求

权威
英语教材主编
刘道义
特别推荐

童趣出版有限公司编译　　人民邮电出版社出版

新课标达标训练丛书

英语基础科学与人文阅读进阶

高中段·高二(下)

〔美〕Jeri Cipriano, Ken Cameron, Mark Gave等 著

罗敏 张蕾 编

王英民 审

童趣出版有限公司编译　　人民邮电出版社出版

Photo Credits (starting from cover page): CORBIS; Holt Studios/Nigel Cattlin/Photo Researchers; Robert Holmes/CORBIS; Alison Wright/CORBIS; CORBIS; Richard Warren; CORBIS

新课标达标训练丛书

英语

基础科学与人文

阅读进阶

高中段·高二(下)

〔美〕Jeri Cipriano, Ken Cameron, Mark Gave 等 著

罗 敏 张 蕾 编

王英民 审

责任编辑：王新军

美术设计：杜 平

童趣出版有限公司编译

人民邮电出版社出版

北京市崇文区夕照寺街14号A座(100061)

新华书店总店北京发行所经销

北京慕来印刷有限公司印制

北京汉魂图文设计有限公司制版

开本：16 印张：8

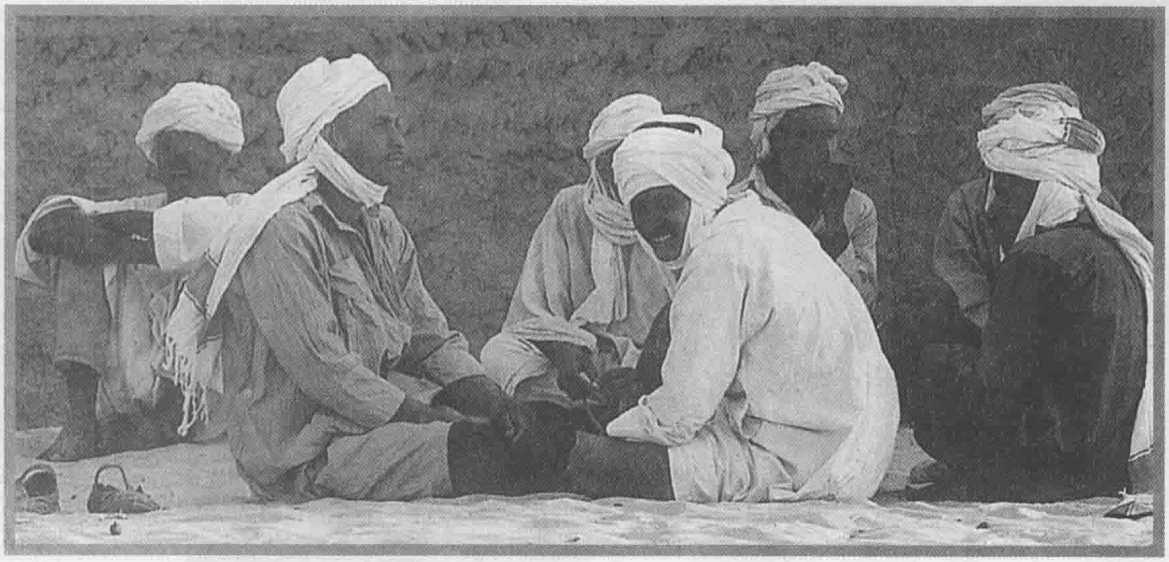
2003年11月第一版 2003年11月第一次印刷

印数：1-5000册

书号：ISBN 7-115-11630-X/G·1057

图字：01-2002-3581

定价：9.80元



目　　录
Contents

Plant Genetics _____ **1**

From Pyramids to Skyscrapers _____ **20**

Conquering Mount Everest _____ **40**

American History Adds Up _____ **55**

Weather Works _____ **73**

Native People _____ **91**

Glossary _____ **107**

Answer key _____ **115**

Plant Genetics

Pre-reading Task

Try to answer the following questions before you read "Plant Genetics".

- ☆ Do you know what is gene? What is genetics? And what is a plant geneticist?
- ☆ Do you have any idea what is crossing two kinds of plants? Do you know what's a potato? A tomato? How about potatomato?
- ☆ Do you know DNA? Do you think DNA is important to all living things on the earth? Why?
- ☆ What do you think plant genetics can do for humans? Have there already been any genetic upgraded vegetables or fruits? Can you name some?
- ☆ Do you think it is good or bad to change the genes of plants? Why?

Now begin your reading.

Passage 1

Have you ever noticed how many different kinds of plants there are in the world? Some grow to be tall trees. Others creep along the ground. Some are prickly. Others are smooth. Some live only a short time. Others live hundreds of years. Some are poisonous, and others are good to eat.

Why are there so many different kinds? The answer can be found inside the stems, roots, leaves, and flowers of each plant. If you cut open a plant stem or leaf and look at it under the lens of a microscope, you would see that the stem and the leaf are made up of hundreds of tiny, square-shaped compartments. These compartments are called cells.

Within every one of these microscopic cells is an even smaller ball-shaped structure called the nucleus . The nucleus is like the brain or command center of the cell. It contains all the instructions that tell the plant how it should grow, what color it should be, how tall it should get, and what it should taste like. The instructions inside the nucleus also decide whether the plant will be poisonous or good to eat.

When a seed first begins to grow, it "knows" exactly what kind of plant it will become. It has a special set of instructions within the nucleus of each one of its cells. Plants that are the same have the same set of instructions. A more scientific name for this set of instructions is the plant's genes (pronounced like "jeans" that you wear). The study of plant genes is called plant genetics. A scientist who studies plant genetics is called a plant geneticist. (273 words)

Task 1

Choose the right answer for each of the following questions.

1. _____ are called cells.

A. The large, square-shaped compartments in the stem and leaves of a plant

B. The large, ball-shaped compartments in the stem and leaves of a plant

C. The tiny, square-shaped compartments in the stem and leaves of a plant

D. The tiny, ball-shaped compartments in the stem and leaves of a plant

2. What a plant looks like is decided by _____.

A. a plant geneticist

B. its genes

C. the color of its flower

D. the circumstances under which it grows

3. _____ gives instructions to the plant how it should grow.

A. The seed

B. The root

C. The nucleus

D. The gene

4. There are different kinds of plants _____.

A. because they have different seeds

B. because they have different genes

C. because they have different flowers

D. because every plant needs to be unique to survive

5. We can see the nucleus _____.

A. with the help of a microscope

B. with our naked eyes

C. only when the plant blossoms

D. only in the seed of a plant

6. Not every cell of plants has a nucleus.

A. Yes, it is true.

B. No, it is false.

C. I'm not sure.

D. We don't know yet.

Task 2

Match the words and expressions in column A with their opposite meanings in column B.

A	B
1. poisonous	A. giant
2. tiny	B. different
3. live hundreds of years	C. good to eat
4. same	D. creep along the ground
5. grow to be tall trees	E. obey
6. smooth	F. live only a short time
7. command	G. prickly
8. adult	H. baby

Task 3

Writing

Suppose you will give a scientific speech on plants, write an article for your short speech, using the information given in this passage. If you have ever grown flowers or crops, tell others your experience. Do not care too much about the accuracy of the language. You may use the words listed below.

Species（种类）, blossom（开花）, food chain（食物链）, plough（耕种）, harvest（收获）, cactus（仙人掌）, shrub（灌木）, cytoplasm（细胞质）

Words & Expressions

compartment [kəm'pɑ:tmənt] *n.*间隔间，车厢
contain [kən'teɪn] *v.*包含，容纳
creep [kri:p] *v.*爬，蹑手蹑脚，蔓延
gene [dʒi:n] *n.*[遗传]因子，[遗传]基因
genetics [dʒɪ'netɪks] *n.*遗传学
geneticist [dʒɪ'netɪsɪst] *n.*遗传学者
instruction [ɪn'strʌkʃn] *n.*指示，指导，指令
lens [lenz] *n.*透镜，镜头
microscope ['maɪkrəskəʊp] *n.*显微镜
microscopic [ˌmaɪkrə'skɒpɪk] *a.*用显微镜可见的，精微的
nucleus ['nju:klɪəs] *n.*核子
prickly ['prɪklɪ] *a.*多刺的
structure ['strʌktʃə(r)] *n.*结构，构造，建筑物

Passage 2

Thousands of years ago people did not have farms. Instead, they got food by hunting animals and gathering plants that grew wild. One plant they gathered was a type of wild grass. They collected its small seeds and ground them into flour to make a kind of bread. That wild grass was the ancestor of what we now call wheat.

At some point, scientists believe, someone had the idea to save some of the seeds from the wild grass plants and put them in the ground. This person was the world's first farmer. From those seeds, more plants grew. Now people didn't have to go out looking for wild plants in order to get the seeds they needed to make bread. They could make the plants grow where they wanted them. This was the beginning of agriculture.

Scientists also think that at some point, an early farmer noticed that some of the wild grass plants made larger seeds than others. Larger seeds were better than smaller seeds, because not as many seeds were needed to make the same amount of flour. The farmers picked out these larger seeds to plant. Then more plants with large seeds grew. The instructions for making plants with larger seeds was in the nucleus of each cell in the plant.

After planting more and more of these large seeds each year, the ancient farmers would sometimes find one or two plants in their fields that had seeds that were a little bit bigger than the others. They used most of the seeds for flour, but kept the largest seeds they could find each year. Those seeds were saved for planting. After thousands of years of selecting, or choosing, the biggest seeds, farmers ended up with what we know today as wheat. It came from nothing more than an ordinary grass.

The early farmers didn't realize it at the time, but each year they were choosing the grass plants with the best set of genes—genes that carried instructions for making larger seeds. Although they didn't know it, they were using the science of plant genetics.

Many other crops grown by farmers today have been selected from wild plants in the same way. For example, have you ever found and eaten wild strawberries? They are much smaller than strawberries that are grown on farms. How do you think the larger strawberries that you buy in the store came from the tiny wild strawberries that you can pick in the woods?

Would it surprise you to know that corn is also a type of grass? It was first

grown in Central America thousands of years ago. Its seeds are called kernels. Very few kernels grew on wild corn grass. It took thousands of years of choosing the corn grass plants with the biggest seeds, or kernels, to make what we enjoy today as corn on the cob.

Here's another example of how plant genetics has changed the food we eat. Did you know that cabbage, broccoli, cauliflower, Brussels sprouts, and many other vegetables all came from the same wild plant? To create cabbage, farmers selected plants that made one superlarge bud in the middle. To create Brussels sprouts, they chose plants that made many smaller buds along the stem. Cauliflower is just a type of broccoli that doesn't become green. Its genes are just a little bit different. (561 words)

Task 1

Choose the right answer for each of the following questions.

1. Thousands of years ago, our ancestors got food by _____.

A. planting crops on their farms

B. raising sheep and cows on the prairie

C. hunting animals and gathering plants that grew wild

D. fishing alongside a lake or a river

2. Which of the following statement is NOT true?

A. Scientists are sure who had the idea to save some of the seeds from the wild grass plants and put them in the ground.

B. The wheat we plant today actually came from a type of wild grass.

C. The corns we plant today have much more kernels on each cob than the wild corns.

D. Ancient farmers collected seeds of some wild grass for planting as well as for food.

3. Why larger seeds are better?

A. Because they look nicer.

B. Because larger seeds can make tastier bread.

C. Because larger seeds are easier to collect.

D. Because less larger seeds are needed to make the same amount of flour.

4. What did ancient farmers save the largest seeds for?

A. For planting.

B. For gifts.

C. For special rituals.

D. They saved these seeds in case of famine.

5. We can infer from this passage that _____.

A. ancient farmers consciously selected the best seeds according to their knowledge of plant genetics

B. ancient farmers could make plants produce larger seeds

C. every natural crop we plant today came from a certain type of wild grass

D. ancient farmers knew at the beginning what kind of wild grass could be used for food

Task 2

Fill in the blanks with the proper forms of the following words or expressions in the square. Each word or expression can be used only once.

pick out	instead	at the time	end up with	estimate
come from	nothing more than	refer to	make up of	

1. We didn't know each other _____, but at last we became best friends.
2. "It frightened everybody in the room," Jack said. "But it turned out to be _____ a mouse."
3. They had a bitter fight and finally _____ the best boxer of that year.
4. The football team _____ the wounded and the retired. No wonder it got the last.
5. The meeting _____ the singing of The Internationale.
6. I had no supper but three bananas _____.
7. Strength _____ unity.
8. The students usually _____ their beautiful, good-tempered English teacher as Ms. Sweet.
9. The age of this prehistoric skeleton _____ at 30,000 years.

Task 3

Writing

Imagine how other crops and fruits changed to be what they like today. Choose one and make up a story. It does not matter whether the crop or fruit did come into being in the way you think of or invent so long as you can make it sound real and believable. You may use the words listed below.

edible（可食用的）, weed（杂草）, oat（燕麦）, barley（大麦）,
broccoli（椰菜）, mango（芒果）, litchi（荔枝）, coconut（椰子）

Words & Expressions

ancestor ['ænsestə(r)] *n.*祖先，祖宗
broccoli ['brɒkəlɪ] *n.*椰菜
Brussels sprouts 芽甘蓝
bud [bʌd] *n.*芽，蓓蕾
cabbage ['kæbɪdʒ] *n.*[植]甘蓝，卷心菜
cauliflower ['kɒlɪflaʊə(r)] *n.*[植]花椰菜
cob [kɒb] *n.*玉米棒子
ground [graʊnd] *v.*(grind 的过去式)磨(碎)，碾(碎)，折磨
kernel ['kɜ:nl] *n.*(硬壳果)仁，(去壳的)麦粒，谷粒

Passage 3

For a long time, people continued to select seeds from plants in nature that would grow the best food on their farms and the prettiest flowers in their gardens. They still didn't know that they were selecting plants with the best genes, but that is what they were doing.

They also learned how to create new kinds of plants by crossing one kind of plant with another. The flowering parts of the plants are important in this process. To cross two kinds of plants, you take some of the dust-like, yellow pollen from the anther of one plant's flower and put it onto the sticky, green stigma of the flower of a different kind of plant. Weeks later, seeds should develop in the ovary chamber of the plant that received the pollen. When those seeds are planted, they will grow into a kind of plant that is a mixture of the original two plants. The new plant will have some genes of one plant and some genes of the other. A plant that is the result of crossing two other plants is called a hybrid. Two examples of hybrid fruits are the loganberry and the boysenberry. The loganberry is a cross between a blackberry and a raspberry. The boysenberry is a cross between a blackberry and a loganberry.

Have you ever eaten a tangelo? The tangelo is a cross between a grapefruit and a tangerine. Many people love the sweet taste of tangerines, but tangerines are not very big. Grapefruits are bigger, but they are not very sweet. By crossing a grapefruit with a tangerine, farmers have been able to create a larger fruit that has the sweetness of a tangerine.

Some hybrids, such as the tangelo, are wonderful because they combine the best genes of two different kinds of plants. Other hybrids are not so wonderful. For example, farmers once tried to cross a tomato and a potato plant. Potatoes grow underground. Tomatoes grow above ground.Farmers wanted to create one plant that would grow pota-

toes underground and tomatoes above ground. Instead, the hybrid potatomato plant made roots like a tomato underground and stems like a potato above ground. It didn't produce potatoes or tomatoes. The hybrid had the worst genes of both plants blended together.

The first person to experiment with crossing plants was Gregor Mendel. Mendel was a monk who enjoyed gardening. He became curious about why some pea plants were tall and others were short, and he decided to experiment. Although he did not think of himself as a scientist, he certainly acted like one. He set up very careful experiments and he kept complete notes. He accurately recorded all his results.

Mendel began his experiments with four steps and then repeated them many times. First, he crossed short and tall pea plants. Second, he removed the seeds from the plants a few weeks later. Third, he planted the new seeds. Fourth, he wrote down the height of the new plants.

Mendel found that if you crossed a tall pea plant with a short pea plant, all the new seeds would produce tall plants. However, when he crossed these new tall plants with each other in a second experiment, some of the seeds from those tall plants produced short plants!

In order to understand why this happened, you need to know that there are two genes for each characteristic of a plant, such as its height or color. You also need to know that certain genes are stronger than others. For example, the gene for tallness in pea plants is stronger than the gene for shortness. Today we call the stronger genes dominant and the weaker ones recessive.

If a pea plant has two tall genes, of course it will be tall. If it has one tall gene and one short gene, it will still be tall, because the tall gene is stronger than the short gene. In order for a pea plant to be short, it must have two short genes. If you cross a tall pea plant with a short pea plant, all the plants you get will have one tall and one short gene. But the plants will all be tall.

But say you have two tall pea plants. Each one has one tall gene and one short gene. You cross the two plants, and you plant four of the seeds that you get. The chances are that you will end up with one plant that has two tall genes, two plants that have one tall and one short gene, and one plant that has two short genes. All the plants will be tall except for the one with the two short genes. That plant will be short.

Mendel carefully wrote down everything he did in his experiments with garden peas. Then, in 1865, he wrote a book called Experiments in Plant Hybridization. It was the first book about plant genetics. (814 words)

Task 1

Choose the right answer for each of the following questions.

1. Which of the following statement is true?

A. If you want to get a combination of two plants, the only way is to put the pollen from the anther of one plant's flower onto the stigma of the flower of the other.

B. Crossing a loganberry and a boysenberry, you will get a blackberry.

C. The tangelo is a cross between an orange and a tangerine.

D. The hybrid of crossing a potato and a tomato plant is a genetic failure.

2. Which is the possible Chinese name for grapefruit (in paragraph 3)?

A. 葡萄

B. 柚子

C. 金橘

D. 提子

3. If a pea plant is tall, we can be sure _____.

A. it has two tall genes

B. it has one tall gene and one short gene

C. it has at least one tall gene

D. none of above

4. When you cross an original tall pea plant and a short pea plant, what will you get?

A. All are tall pea plants.

B. Half are tall pea plants, and half are short pea plants.

C. All are short pea plants.

D. A quarter of them are short pea plants, and the rest are tall pea plants.

5. When you cross the hybrids you get in problem 4, how many short pea plants will you get?

A. Half.

B. One-fourth.

C. None.

D. One-third.

6. What conclusion can you draw from the pea plant experiments?

A. Tall genes can always beat short genes.

B. In pea plant, the short gene is recessive.

C. In pea plant, the short gene is dominant.

D. Short genes can always beat tall genes.

Task 2

Complete the article with the proper forms of the following words or expressions in the square. Each word or expression can be used only once.

set up	chances are that	think of...as	in order to
put...into	write down	be curious about	keep notes

1 _____ you _____ why there are colorful flowers in the world? Do you know that there is no pink roses in nature? Now try to 2 _____ yourself _____ a scientist and let's create pink roses by ourselves. We'll 3 _____ our own experiments and 4 _____. 5 _____ get pink roses, we need a red rose tree and a white rose tree. First, cut a white rose branch with buds and 6 _____ it _____ water for a night. Second, make a deep cut with a sharp knife on a strong branch of the red rose tree. Then, graft (嫁接) the white rose branch in the red rose branch and tie them up. Next, do the same experiment with a red rose branch and the white rose tree. Finally, repeat the process with more white rose branches and white rose ones, since 7 _____ some branches may die before they blossom due to improper grafts. Take a close observation and remember to 8 _____ dates and other data. See if we can get pink roses.

(NOTICE: This is NOT a scientific graft instruction. If you really want to do the experiment, ask gardening experts for help.)

Task 3

Writing

Write a summary on Mendel's pea plant experiments, providing credible statistical data and dates with a scientific conclusion (which can be imaginary). You may report some experiments of another plant done by yourself. You can use the information given in this passage, but you should not care too much about the accuracy of the language.

shoot up（发芽）, cotyledon（子叶）, artificial fertilization（人工授精）

hybridize（杂交）, dominate（支配）, horticulture（园艺）

Words & Expressions

boysenberry ['bɔɪzənbərɪ] *n.*博伊增莓
cross [krɒs] *v.*使杂交
dorminant ['dɒmɪnənt]
a.(指遗传特征)显性的，优势的
grapefruit ['greɪpfru:t] *n.*葡萄柚
hybrid ['haɪbrɪd] *n.*杂交植物
hybridization [ˌhaɪbrɪdaɪ'zeɪʃən] *n.*杂交
loganberry ['ləʊgənbərɪ] *n.*洛根莓
ovary ['əʊvərɪ] *n.*子房
pollen ['pɒlən] *n.*花粉
recessive [rɪ'sesɪv]
a.(指遗传性状)隐性的，潜性的
stigma ['stɪgmə] *n.*柱头
(花的中央接受花粉的部分)
tangelo ['tændʒələʊ] *n.*橘柚
tangerine [ˌtændʒə'ri:n] *n.*柑橘

Passage 4

Mendel's experiments were an important first step in understanding plant genetics, but later scientists still had many questions. For example, what are genes made of, anyway?

We know now that genes are made of DNA. You may have heard of something called DNA, but you may not understand just what DNA is or why it is so important. In the 1940s, researchers discovered that DNA was a chemical substance. But it was not until 1953 that two scientists working in England, James Watson and Francis Crick, discovered the actual structure of DNA. The letters "DNA" stand for deoxyribonucleic acid. James Watson and Francis Crick along with another scientist, Maurice Wilkins, received the Nobel Prize in Medicine in 1962 because of their discovery.

Watson and Crick discovered what DNA looks like and how it works. To imagine what DNA looks like, picture beads on two long strings that are joined like the sides of a ladder and twisted together. Imagine that the beads come in four colors, arranged in different patterns on the strings. Of course, DNA is not really made of beads. It is made of four different kinds of molecules called A, T, C, and G. The letters stand for four different chemicals.

It is the sequence, or order, of these four molecules on the strings of DNA that makes each gene special. There is a special gene for every characteristic of every

plant, from flower color, to leaf size, to height. Every gene is like a message in secret code that tells the plant how to grow in one special way.

For example, one section of a plant's DNA string contains the gene for color. If the molecules in that section are arranged A-G-A-C-C-C, the plant might have red flowers. If they are arranged T-G-A-C-T-T, the plant might have white flowers. (280 words)

Task 1

Choose the right answer for each of the following questions.

1. James Watson received the Nobel Prize in Medicine in 1962 with other two scientists because _____.

A. they discovered the actual structure of DNA
B. they discovered DNA
C. they discovered how DNA works
D. they discovered what DNA looks like and how it works

2. A strand of DNA _____.

A. looks just like a ladder
B. looks like a necklace
C. looks like beads on two long strings that are joined like the sides of a ladder and twisted together.
D. is not known yet.

3. DNA is made of _____ different kinds of molecules.

A. one
B. two
C. three
D. four

4. There are different species on the earth _____.

A. because they have different way of breeding their descendants
B. because they live under different circumstances
C. because they have different sequence of the molecules on the strings of DNA
D. because they have different molecules on the strings of their DNA