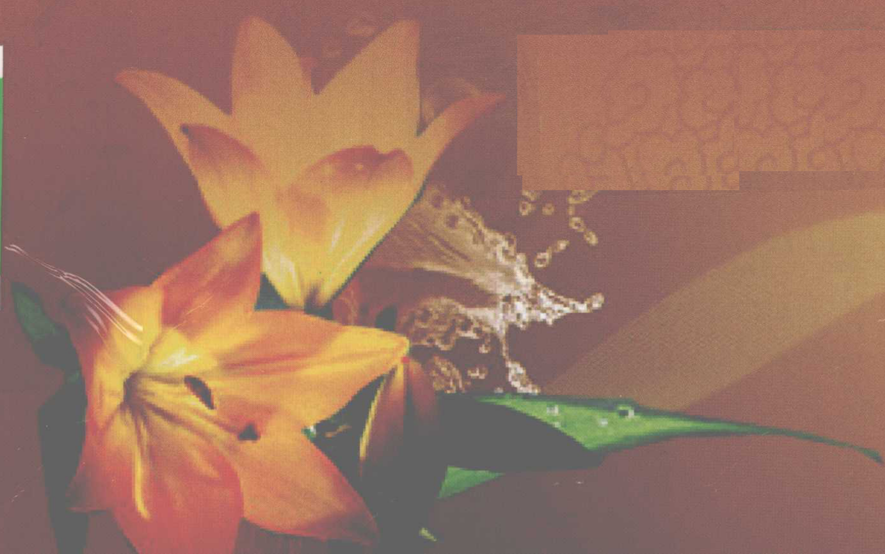
总主编　张树德

大学英语 第4册

快速阅读高手

主编　黄影妮



苏州大学出版社

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总主编：张树德
主　编：黄影妮
副主编：贺　颖　罗　萍

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图书在版编目(CIP)数据

大学英语快速阅读高手.第4册/黄影妮主编.—苏州:苏州大学出版社,2010.8
ISBN 978-7-81137-536-7

Ⅰ.①大… Ⅱ.①黄… Ⅲ.①英语—阅读教学—高等学校—教学 Ⅳ.①H319.4

中国版本图书馆CIP数据核字(2010)第150128号

大学英语快速阅读高手
第4册
张树德 总主编
黄影妮 主编
责任编辑 杨 华

苏州大学出版社出版发行
(地址:苏州市十梓街1号 邮编:215006)
丹阳市教育印刷厂印装
(地址:丹阳市西门外 邮编:212300)

开本787 mm×960 mm 1/16 印张37.5(共四册) 字数800千
2010年8月第1版 2010年8月第1次印刷
ISBN 978-7-81137-536-7 定价:64.00元(共四册)

苏州大学版图书若有印装错误,本社负责调换
苏州大学出版社营销部 电话:0512-65225020
苏州大学出版社网址 http://www.sudapress.com

《大学英语快速阅读高手》编委会

前言

学习英语，阅读历来就是一条必不可少的重要途径，这既是提高学习者语言综合能力的手段，也是学习语言的重要目标之一。新一轮的大学英语教学改革特别强调培养学生实际使用英语的能力，尤其是通过多种阅读渠道获取知识和信息的能力。教育部颁布的《大学英语课程教学要求》将大学阶段的英语教学分为三个层次：一般要求、较高要求和更高要求，每个层次都对学生的阅读能力提出了具体而明确的要求。其中对阅读理解能力的一般要求为："能够基本读懂一般性题材的英文文章，阅读速度达到每分钟70词，在快速阅读篇幅教长、难度略低的材料时，阅读速度达到每分钟100词，能基本读懂国内英文报刊，掌握中心意思，理解主要事实和有关细节。能读懂工作、生活中常见的应用文体的材料。能在阅读中使用有效的阅读方法。"从2006年起，大学英语四、六级考试还增设了"快速阅读"的考试内容。因此，为适应快速阅读的这些新要求，我们组织相关教师编写了《大学英语快速阅读高手》系列教材，一方面积极应对大学英语教学改革，倡导大学英语个性化、自主性学习等学习理念；另一方面帮助广大学生扩大阅读范围，增加词汇量，提高阅读速度，培养独立阅读习惯和阅读能力。

《大学英语快速阅读高手》第1册至第4册编写遵循这样的原则：内容新颖，时代感强，选材既有历史、传统的内容，但更注重社会、科技发展的最新信息；体裁和题材多样化，考虑到知识的多样性，文、理、工等内容兼顾；内容富有知识性和趣味性，既注重国外社会、文化的介绍，也增加中国传统文化及风俗的描述，以便增长学习者的多元知识；练习题型多样化，既有四、六级考试快速阅读题型"是非判断"和"句子填空"，又设置"多项选择"。本套教材共4册，每册及单元之间由浅入深、由易到难、循序渐进。每单元以话题为线索，选取知识内容相近、体裁不同的阅读材料4篇并设置相关练习。为了便于学习者及时检验自己的阅读情况，教材后面附有参考答案。本教材每单元的内容，一部分可以作为课堂强化训练，一部分可以作为学习者的课后自主练习。

《大学英语快速阅读高手》第1册至第4册由广西工学院张树德任总主编，各分册采取主编负责制原则。其中第1册和第2册由河池学院组织相关教师编写，第3册和第4册由广西工学院组织相关教师编写。各分册的编写人员分别是：第1册由谢雨利、龙星源任主编，杨雪静、陆世雄、卢贞媛任副主编；第2册由梁荣敏、李晓兰任主编，韦合、罗潇潇、黄薇澈任副主编；第3册由黄江生任主编，郑丽萍、李彩霞、袁雄、谭玮任副主编；第4册由黄影妮任主编，贺颖、罗萍、覃美静、温颖茜任副主编。

在编写这套教材过程中，我们还得到了河池学院银云忠教授的热情指导和支持。

本教材的编写与出版得到了苏州大学出版社的大力支持，在此，我们谨致以诚挚的谢意！

由于编者水平有限，如有不当之处，衷心希望广大教师同仁和学生提出批评意见和建议，以便今后改进和完善。

编　者

2010年7月

大学英语快速阅读高手
第4册

目录

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Unit One Energy

Directions: You will have 15 minutes to go over each passage quickly and answer the questions. For questions 1 – 7, choose the best answer from the four choices marked A, B, C and D. For questions 8 – 10, complete the sentences with the information given in the passage.

Passage 1

Energy

Introduction

Energy is one of the most fundamental parts of our universe. We use energy to do work. Energy lights our cities. Energy powers our vehicles, trains, planes and rockets. Energy warms our homes, cooks our food, plays our music, gives us pictures on television. Energy powers machinery in factories and tractors on a farm. Energy from the sun gives us light during the day. It dries our clothes when they're hanging outside on a clothes line. It helps plants grow. Energy stored in plants is eaten by animals, giving them energy. And predator(食肉动物) animals eat their prey, which gives the predator animals energy.

Everything we do is connected to energy in one form or another. Energy is defined as: "the ability to do work." When we eat, our bodies transform the energy stored in the food into energy to do work. When we run or walk, we "burn" food energy in our bodies. When we think, read or write, we are also doing work. Many times it's really hard work! Work means moving something, lifting something, warming something, lighting something.

What is energy?

Energy causes things to happen around us. Look out of the window. The sun radiates light and heat energy. It helps plants to grow. At night, lamps in our home use electrical energy to light our rooms. When a car drives by, it is being powered by gasoline, a type of stored energy. The food we eat contains energy. We use that energy to work and play. We learned the definition of energy in the introduction: Energy Is the Ability to Do Work. Energy can be found in a number of different forms. It can be chemical energy, electrical energy, heat [thermal(热的,热量的) energy], light(radiant energy), mechanical energy, and nuclear energy.

Stored and moving energy

Energy makes everything happen and can be divided into two types: Stored energy is called potential energy. Moving energy is called kinetic(运动的,动力学的) energy. With a pencil, try this example to know the two types of energy. Put the pencil at the edge of the desk and push it off to the floor. The moving pencil uses kinetic energy. Now, pick up the pencil and put it back on the desk. You used your own energy to lift and move the pencil. Moving it higher than the floor adds energy to it. As it rests on the desk, the pencil has potential energy. The higher it is, the further it could fall. That means the pencil has more potential energy.

How do we measure energy?

Energy is measured in many ways. One of the basic measuring blocks is called a Btu. This stands for British thermal unit and was invented by, of course, the English. Btu is the amount of heat energy. It takes to raise the temperature of one pound of water by one degree Fahrenheit at sea level. One Btu equals about one blue-tip kitchen match. One thousand Btus roughly equals: One average candy bar or 4/5 of a peanut butter and jelly sandwich. It takes about 2,000 Btus to make a pot of coffee.

Energy also can be measured in joules. Joules sounds exactly like the word jewels, as in diamonds and emeralds. A thousand joules is equal to a British thermal unit: 1,000 joules = 1 Btu. So, it would take 2 million joules to make a pot of coffee. The term "joule" is named after an English scientist James Prescott Joule who lived from 1818 to 1889. He discovered that heat is a type of energy. One joule is the amount of energy needed to lift something weighing one pound to a height of nine inches. So, if you lifted a five-pound sack of sugar from the floor to the top of a counter(27 inches), you would use about 15 joules of energy.

Around the world, scientists measure energy in joules rather than Btus. It's much like people around the world using the metric system of meters and kilograms, instead of the English system of feet and pounds. Like in the metric system, you can have kilojoules—"kilo" means 1,000(1,000 joules = 1 kilojoule = 1 Btu). A piece of buttered toast contains about 315 kilojoules(315,000 joules) of energy. With that energy you could jog for 6 minutes, bicycle for 10 minutes, walk briskly for 15 minutes, sleep for 1½ hours, run a car for 7 seconds at 80 kilometers per hour(about 50 miles per hour), light a 60-watt light bulb for 1½ hours, or lift that sack of sugar from the floor to the counter 21,000 times!

Changing energy

Energy can be transformed into another sort of energy. But it cannot be created and it cannot be destroyed. Energy has always existed in one form or another. Here are some changes in energy from one form to another. Stored energy in a flashlight's batteries becomes light energy when the flashlight is turned on. Food is stored energy. It is stored as a chemical with potential energy. When your body uses that stored energy to do work, it becomes kinetic energy. If you overeat, the energy in food is not "burned" but is stored as potential energy in fat cells. When you talk on the phone, your voice is transformed into electrical energy, which passes over wires(or is transmitted through the air). The phone on the other end changes the electrical energy into sound energy through the speaker. A car uses stored chemical energy in gasoline to move. The engine changes the chemical energy into heat and kinetic energy to power the car. A toaster changes electrical energy into heat and light energy. (If you look into the toaster, you'll see the glowing wires.) A television changes electrical energy into light and sound energy.

Heat energy

Heat is a form of energy. We use it for a lot of things, like warming our homes and cooking our food. Heat energy moves in three ways: conduction; convection(对流) and radiation.

Conduction occurs when energy is passed directly from one item to another. If you stirred a pan of soup on the stove with a metal spoon, the spoon will heat up.

The heat is being conducted from the hot area of the soup to the colder area of spoon. Metals are excellent conductors of heat energy. Wood or plastics are not. These "bad" conductors are called insulators. That's why a pan is usually made of metal while the handle is made of a strong plastic.

Convection is the movement of gases or liquids from a cooler spot to a warmer spot. If a soup pan is made of glass, we could see the movement of convection currents in the pan. The warmer soup moves up from the heated area at the bottom of the pan to the top where it is cooler. The cooler soup then moves to take the warmer soup's place. The movement is in a circular pattern within the pan. The wind we feel outside is often the result of convection currents. You can understand this by the winds you feel near an ocean. Warm air is lighter than cold air and so it rises. During the daytime, cool air over water moves to replace the air rising up as the land warms the air over it. During the nighttime, the directions change—the surface of the water is sometimes warmer and the land is cooler.

Radiation is the final form of movement of heat energy. The sun's light and heat cannot reach us by conduction or convection because space is almost completely empty. There is nothing to transfer the energy from the sun to the earth.

From: http://www.energyquest.ca.gov/story/index.html

1. According to the passage, the definition of energy—the ability to do work, is based on the facts EXCEPT ______.

   A. when we think or read or write, we are also doing work

   B. we sleep every day

   C. when we eat, our bodies transform the energy stored in the food into energy to do work

   D. when we run or walk, we "burn" food energy in our bodies

2. Energy can be found in a number of different forms EXCEPT ______.

   A. water energy　　B. electrical energy

   C. nuclear energy　　D. chemical energy

3. Which of the following statements is true about energy?

   A. Energy can be divided into stored energy, potential energy and moving energy.

B. There is only one way to measure energy: Btu.

C. Energy can be transformed, created and destroyed.

D. Energy is the ability to do work.

4. Btu stands for ________.

A. British unit B. British tube

C. British thermal unit D. British tunnel

5. With the energy a piece of buttered toast contains, you could ________.

A. jog for 8 minutes B. bicycle for 20 minutes

C. walk briskly for 15 minutes D. sleep for 3 hours

6. Which of the following is NOT the change in energy from one form to another?

A. The stored energy in your body turns into nutrition.

B. A television changes electrical energy into light and sound energy.

C. Stored energy in a flashlight's batteries becomes light energy when the flashlight is turned on.

D. The phone on the other end changes the electrical energy into sound energy through the speaker.

7. Why is a pan usually made of metal instead of plastic?

A. Because metals are bad conductors of heat energy.

B. Because metals are excellent conductors of heat energy.

C. Because plastics are excellent conductors of heat energy.

D. Because metals are insulators.

8. Everything we do ____________ energy in one form or another.

9. The term "joule" is ____________ an English scientist James Prescott Joule who lived from 1818 to 1889.

10. Around the world, scientists measure energy in joules ________ Btus.

Passage 2

Solar Energy

We have always used the energy of the sun as far back as humans have existed on this planet. As far back as 5,000 years ago, people "worshipped" the sun. Ra, the sun-god, was considered the first king of Egypt. In Mesopotamia, the sun-god Shamash was a major deity and was equated with justice. In Greece there were two sun deities, Apollo and Helios. The influence of the sun also appears in other religions—Zoroastrianism, Mithraism, Roman religion, Hinduism, Buddhism, the Druids of England, the Aztecs of Mexico, the Incas of Peru, and many Native American tribes.

We know today, that the sun is simply our nearest star. Without it, life would not exist on our planet. We use the sun's energy every day in many different ways. When we hang laundry outside to dry in the sun, we are using the sun's heat to do work—drying our clothes.

Plants use the sun's light to make food. Animals eat plants for food. Decaying plants hundreds of millions of years ago produced the coal, oil and natural gas that we use today. So, fossil fuels is actually sunlight stored millions and millions of years ago. Indirectly, the sun or other stars are responsible for ALL our energy. Even nuclear energy comes from a star because the uranium atoms used in nuclear energy were created in the fury of a nova—a star exploding. Let's look at ways in which we can use the sun's energy.

Solar hot water

In the 1890s solar water heaters were being used all over the United States. They proved to be a big improvement over wood and coal-burning stoves. Artificial gas made from coal was available too to heat water, but it cost 10 times the price we pay for natural gas today. And electricity was even more expensive if you even had any in your town! Many homes used solar water heaters. In 1897, 30 percent of the homes in Pasadena, just east of Los Angeles, were equipped with solar water heaters. As mechanical improvements were made, solar systems were used in Arizona, Florida and many other sunny parts of the United States. By 1920, tens of thousands of solar water heaters had been sold. By then, however, large deposits of oil and natural gas were discovered in the western United States. As these low cost fuels became available, solar water systems began to be replaced with heaters burning fossil fuels.

Today, solar water heaters are making a comeback. There are more than half a million of them in California alone! They heat water for use inside homes and businesses. They also heat swimming pools. Panels on the roof of a building contain water pipes. When the sun hits the panels and the pipes, the sunlight warms them. That warmed water can then be used in a swimming pool.

Solar thermal electricity

Solar energy can also be used to make electricity. Some solar power plants, like the one in California's Mojave Desert, use a highly curved mirror called a parabolic trough to focus the sunlight on a pipe running down a central point above the curve of the mirror. The mirror focuses the sunlight to strike the pipe, and it gets so hot that it can boil water into steam. That steam can then be used to turn a turbine(涡轮) to make electricity.

In California's Mojave Desert, there are huge rows of solar mirrors arranged in what's called "solar thermal power plants" that use this idea to make electricity for more than 350,000 homes. The problem with solar energy is that it works only when the sun is shining. So, on cloudy days and at night, the power plants can't create energy. Some solar plants, are a "hybrid"(混合物) technology. During the daytime they use the sun. At night and on cloudy days they burn natural gas to boil the water so they can continue to make electricity.

Another form of solar power plants to make electricity is called a Central Tower Power Plant, like the one—the Solar Two Project. Sunlight is reflected off 1,800 mirrors circling the tall tower. The mirrors are called heliostats and move and turn to face the sun all day long. The light is reflected back to the top of the tower in the center of the circle where a fluid is turned very hot by the sun's rays. That fluid can be used to boil water to make steam to turn a turbine and a generator. This experimental power plant is called Solar II. It was re-built in California's desert using newer technologies than when it was first built in the early 1980s. Solar II will use the sunlight to change heat into mechanical energy in the turbine. The power plant will make enough electricity to power about 10,000 homes. Scientists say larger central tower power plants can make electricity for 100,000 to 200,000 homes.

Solar cells or photovoltaic energy

We can also change the sunlight directly to electricity using solar cells. Solar cells are also called photovoltaic cells—or PV cells for short—and can be found on many small appliances, like calculators, and even on spacecraft. They were first developed in the 1950s for use on US space satellites. They are made of silicon, a special type of melted sand. When sunlight strikes the solar cell, electrons (red circles) are knocked loose. They move toward the treated front surface (dark blue color). An electron imbalance is created between the front and back. When the two surfaces are joined by a connector, like a wire, a current of electricity occurs between the negative and positive sides. These individual solar cells are arranged together in a PV module and the modules are grouped together in an array. Some of the arrays are set on special tracking devices to follow sunlight all day long. The electrical energy from solar cells can then be used directly. It can be used in a home for lights and appliances. It can be used in a business. Solar energy can be stored in batteries to light a roadside billboard at night. Or the energy can be stored in a battery for an emergency roadside cellular telephone when no telephone wires are around. Some experimental cars also use PV cells. They convert sunlight directly into energy to power electric motors on the car.

From: http://www.energyquest.ca.gov/story/chapter15.html

1. What is proved to be a big improvement over wood and coal-burning stoves?
   A. Solar energy is used to make electricity.
   B. Natural gas is replaced by artificial gas.
   C. The invention of microwave.
   D. Solar water heaters were being used all over the United States in the 1890s.
2. Which of the following statements is NOT true about solar energy?
   A. Solar energy can also be used to make food.
   B. We use the sun's energy every day in many different ways.
   C. Solar energy can also be used to make electricity.
   D. Plants use the sun's light to make food.
3. Which of the following is NOT used by the people in California's Mojave Desert to make electricity?
   A. Parabolic trough.　　B. Pipe.
   C. Wood.　　D. Turbine.
4. What is the problem with solar energy?
   A. It may cause pollution.
   B. It works only when the sun is shining.

C. It costs 10 times the price we pay for natural gas.

D. It is used with the violation of religion.

5. Solar II will use the sunlight to change heat into ________ energy in the turbine.

A. electrical B. light C. mechanical D. wind

6. According to scientists, larger central tower power plants can make electricity for ________ homes.

A. 5,000 B. 350,000

C. 100,000 to 200,000 D. 20,000

7. When was solar cells first developed for use on US space satellites?

A. In the 1940s. B. In the 1950s. C. In the 1960s. D. In the 1970s.

8. As far back as 5,000 years ago, people "________" the sun.

9. In 1897, 30 percent of the homes in Pasadena were ________ solar water heaters.

10. As low cost fuels became available, solar water systems began to ________ heaters burning fossil fuels.

Passage 3

Fossil Fuels—Coal, Oil and Natural Gas

Where fossil fuels come from

There are three major forms of fossil fuels: coal, oil and natural gas. All three were formed many hundreds of millions of years ago before the time of the dinosaurs—hence the name fossil fuels. The age they were formed is called the Carboniferous Period. It was part of the Paleozoic(旧石器) Era. "Carboniferous" gets its name from carbon, the basic element in coal and other fossil fuels.

Coal

Coal is a hard, black colored rock-like substance. It is made up of carbon, hydrogen, oxygen, nitrogen and varying amounts of sulphur. There are three main types of coal—anthracite, bituminous and lignite. Anthracite coal is the hardest and has more carbon, which gives it a higher energy content. Lignite is the softest and is low in carbon but high in hydrogen and oxygen content. Bituminous is in between. Today, the precursor(初期形式) to coal—peat—is still found in many countries and