NATIONAL GEOGRAPHIC

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国家地理

英语阅读与写作训练丛书

Energy

能量

[美] Greg Banks 著

适合 高中生及同等英语水平读者使用

北京大学出版社
PEKING UNIVERSITY PRESS

致读者

想在快乐阅读中轻松地提高英语写作能力吗？你会发现，这套《国家地理英语阅读与写作训练丛书》（National Geographic Theme Sets, 下称《丛书》）就是一个很好的选择。

《丛书》共14册，涵盖14个主题，每个主题下的4个相关小话题围绕着关键概念，按阅读和写作的易难程度，循序渐进地依次编排。《丛书》的“关键概念＋递进阅读＋任务型写作”的创新编排体例，帮助学生从培养语感和思维方式开始，在阅读过程中自然习得英语写作的规律和特点，从根本上提高学生的综合语言应用能力。此外，《丛书》紧贴高中英语教学的实际需要，在针对性和实用性方面有着无可比拟的优势：

第一，对生词进行注释。注释生词既为读者创造了猜词空间，也为读者快速查阅提供了方便，不至于被生词破坏了阅读的兴致。考虑到音标对单词记忆，以及培养学生朗读与口语能力的重要作用，我们对所有注释词汇都加注了国际音标。

第二，根据高中英语学习和高考写作的要求，对注释词汇进行三级分类。记忆词汇属于基础词汇，也是高分作文常用词汇，学习者要做到会写、会读、会听、会用；**阅读进阶词汇**是高中学生提高英语水平需要掌握的英语常用词汇，建议学习者经常使用，熟悉这类词汇有助于作文的表达；**阅读参考词汇**包括话题所涉及的专业词汇和非常用词汇，学习者了解即可，可以根据自己的实际情况各取所需。在编排中，记忆词汇在文中用加粗的字体表示。为了方便学生集中记诵，“阅读”板块的记忆词汇被放在每一个小话题的开篇页，“任务型写作”板块的记忆词汇则集中编排在书末。阅读进阶词汇和阅读参考词汇在文中分别用绿色和紫色字体表示，注释词条呈现在当前页上，以利于学生查阅。

第三，以丰富多样的主题和体裁系统地介绍了各类英语应用文的写作。写作从阅读开始，即首先了解优秀文章是什么样的。在阅读的基础上，《丛书》介绍了不同范文的体例特点和适用范围，其中包括记叙文、说明文等十几种常用作文体裁。同时，《丛书》以严谨的思路和清晰的操作步骤，把学生带进一个既有阶梯渐进的具体指引，又有充分创意空间的写作训练营。

第四，具有综合教学功能。由于在指导应用文写作方面的独特设计和精心编排，这套丛书不仅适合学生自学，更适用于课堂的写作教学。《丛书》的写作训练案例是英语教师写作教学中难能可贵的参考资料，可直接作为英语写作课程的辅助教材使用。

Try it! 你会发现，英语阅读原来可以这么轻松快乐，英语写作也不总是“头疼”、“痛苦”的代名词。

朱京力
中国人民大学附属中学
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NATIONAL GEOGRAPHIC

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陈茂注

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Contents

Energy

Think of all the things that move. People move their bodies. Cars drive along the road. Rain falls to the ground. But do you know what is involved in all this **movement**? The answer is **energy**. Energy is involved in everything that happens. Energy is all around you. You will find energy in your home, in factories, at airports, and in sports arenas.

Key Concepts

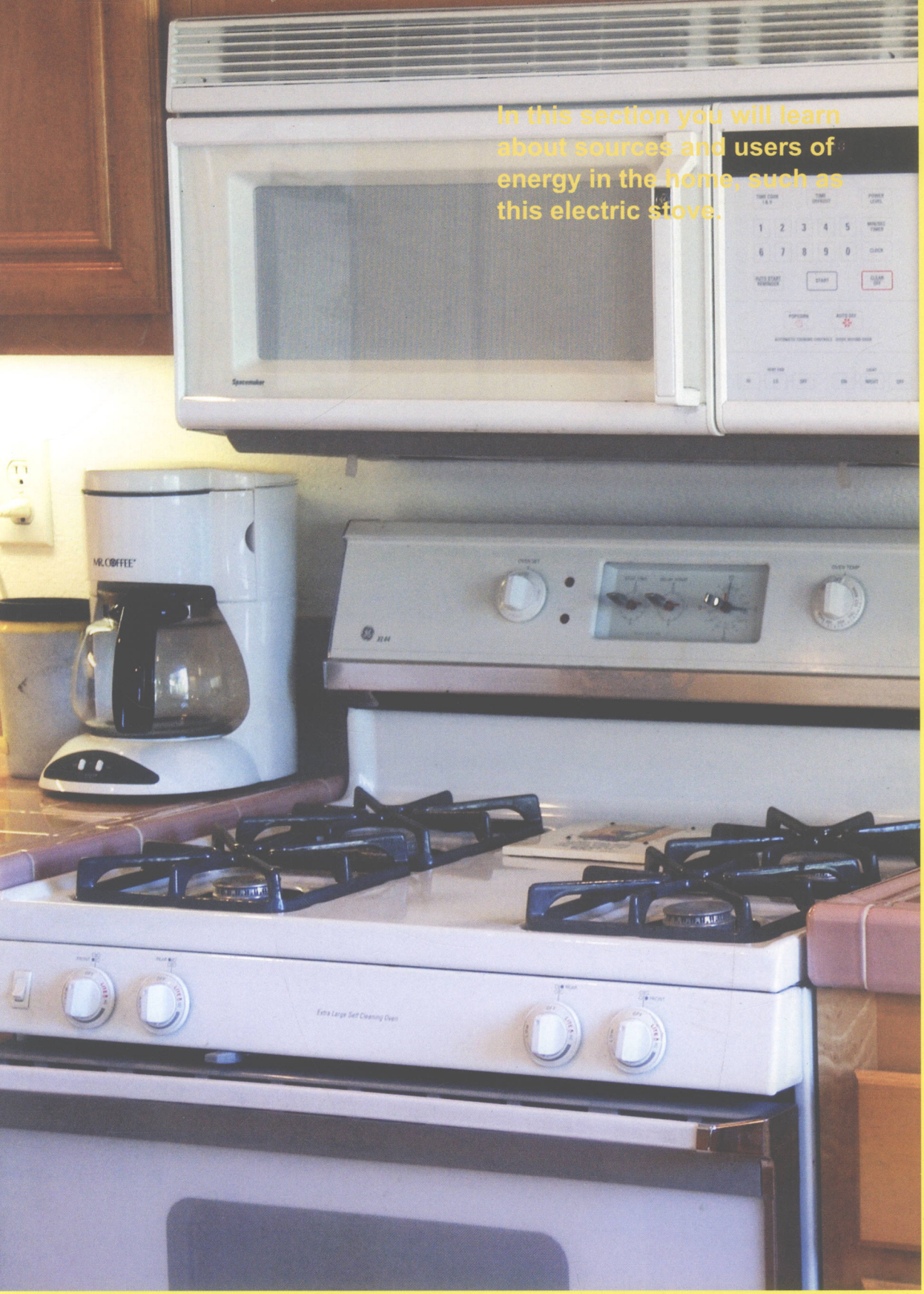
1. Energy is the ability to do work.
2. There are different forms and **sources** of energy.
3. Energy can change from one form to another.

阅读进阶词汇

arena /ə'ri:nə/ *n.*竞技场，表演场地
involve /ɪn'vɒlv/ *v.*涉及

记忆词汇

ability /ə'bɪlɪti/ *n.*能力
apply /ə'plaɪ/ *v.*应用，施加
contain /kən'teɪn/ *v.*包含，包括
depend on 取决于
electricity /ɪlek'trɪsɪti/ *n.*电，电流
energy /'enədʒi/ *n.*能量
force /fɔ:s/ *n.*力
fuel /fju:əl/ *n.*燃料
make up 组成，构成
movement /'mu:vmənt/ *n.*运动
position /pə'zɪʃən/ *n.*位置
source /sɔ:s/ *n.*根源，来源
work /wɜ:k/ *n.*功，做功


In this section you will learn about sources and users of energy in the home, such as this electric stove.
MR. COFFEE
Extra Large Self Cleaning Oven

Energy in the Home

Look around your home. What do you see? There are many appliances and machines. You may find a stove, a refrigerator, and a toaster in the kitchen. There may be a television in the living room. There are lights in every room. Your family might also have a car and a lawn mower. All of these machines and appliances work by using energy. Without energy, we couldn't use any of these things.

You can get energy by plugging things into **electrical outlets**. You can also get energy by burning **fuels** like oil and gas. There is also energy in the food you eat. There is energy in the sunlight that shines through your windows. There is energy all around.

阅读进阶词汇

appliance /əˈplaɪəns/
*n.*器具，设备
electrical outlet 电源插座

阅读参考词汇

mower /ˈməʊə/
*n.*割草机
toaster /ˈtəʊstə/
*n.*烤面包机

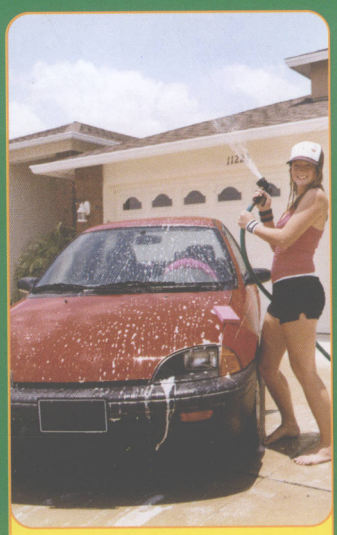
There is energy in these apples.

Here are some pictures of things around the home that use energy. What others can you name?

Energy Users Around the Home

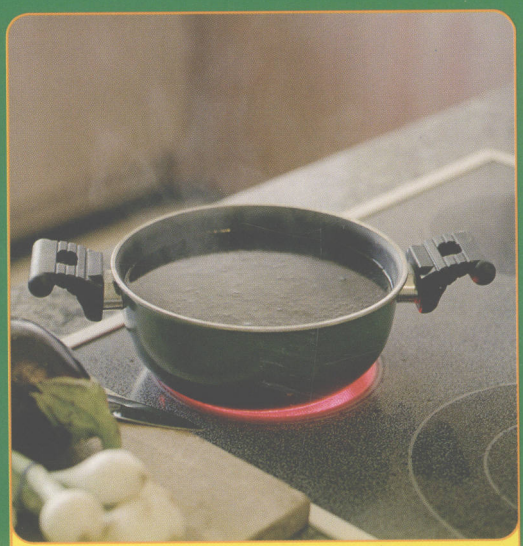
Light

Lawn mower



Car

Television



Stove

Key Concept 1 Energy is the ability to do work.

Energy, Force, and Work

Energy, **force**, and **work** have special meanings in science. In science, energy is the **ability** to do work. To understand what work means, you need to know about force.

阅读进阶词汇

mash /mæʃ/
v.捣碎成糊状

Force is something that makes something else move, stop, or change. When you push open a door, you use force. When you paint your bedroom, you use force. When you **mash** potatoes, you use force.

Two boys are using force to get the work of painting done.

Anytime force makes an object move, stop, or change, work is done. If nothing moves, stops, or changes, no work is done. But whenever work is done, we know that energy is involved. To do work, people and machines need energy to **apply** force to an object.

People need energy to move objects.

This boy's energy allows him to apply force to move the lawn mower.

Key Concept 2 There are different forms and sources of energy.

Basic Forms of Energy

There are two basic forms of energy. One form **depends on** the **motion** of things. The other form depends on the **position** of things.

阅读进阶词汇

buzz /bʌz/ *v.*嗡嗡作响
motion /'məʊʃən/ *n.*运动，移动
whirl /wɜ:l/ *v.*旋转

阅读参考词汇

kinetic energy 动能

Kinetic Energy

The first basic form of energy is called kinetic energy. Kinetic energy is the energy of motion. All moving things have kinetic energy. A **whirling** blender, a **buzzing** bee, and a dropped fork all have kinetic energy. The reason is that they all are moving.

You have kinetic energy when you are moving.

Potential Energy

The other basic form of energy is called potential energy. Potential energy is energy that is stored. When potential energy is **released**, or let out, it can be used to do work. Food has potential energy. When you eat a sandwich, the potential energy becomes kinetic energy. Kinetic energy helps your body to do work.

阅读进阶词汇
release /rɪ'liːs/
*v.*释放

阅读参考词汇
potential energy
势能，潜能

This sandwich has potential energy.

Some Sources of Energy

Energy can be stored and released in different ways.

阅读进阶词汇

switch on 打开
transfer /træns'fɜ:/
*v.*运送

阅读参考词汇

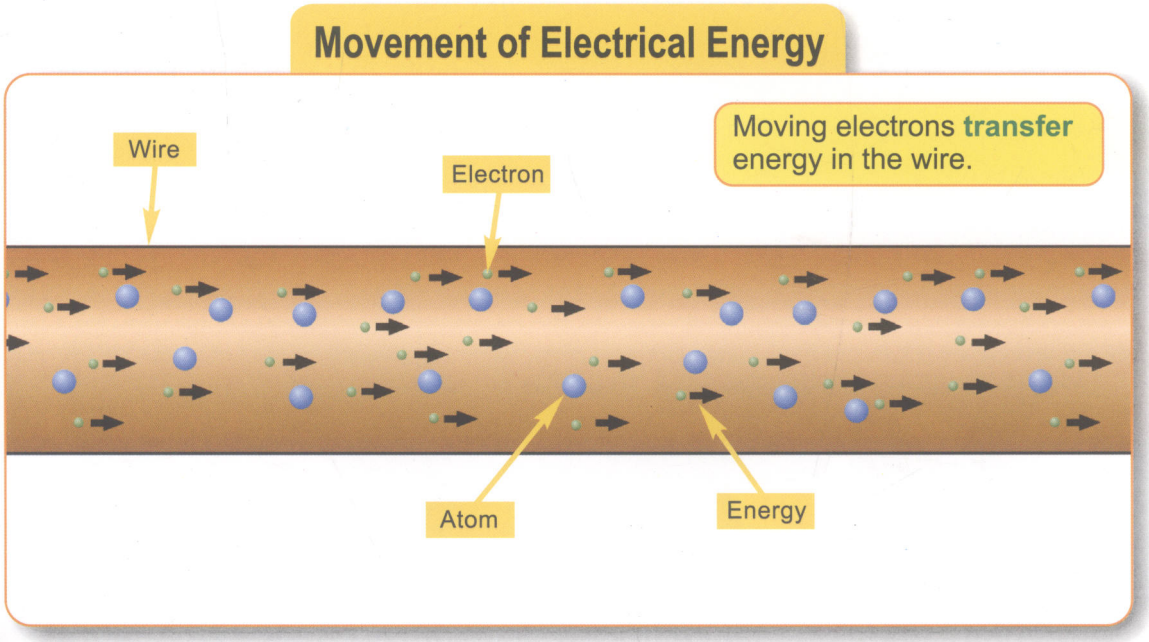
atom /'ætəm/
*n.*原子
electron /ɪ'lektrɒn/
*n.*电子
particle /'pɑ:tɪkəl/
*n.*微粒

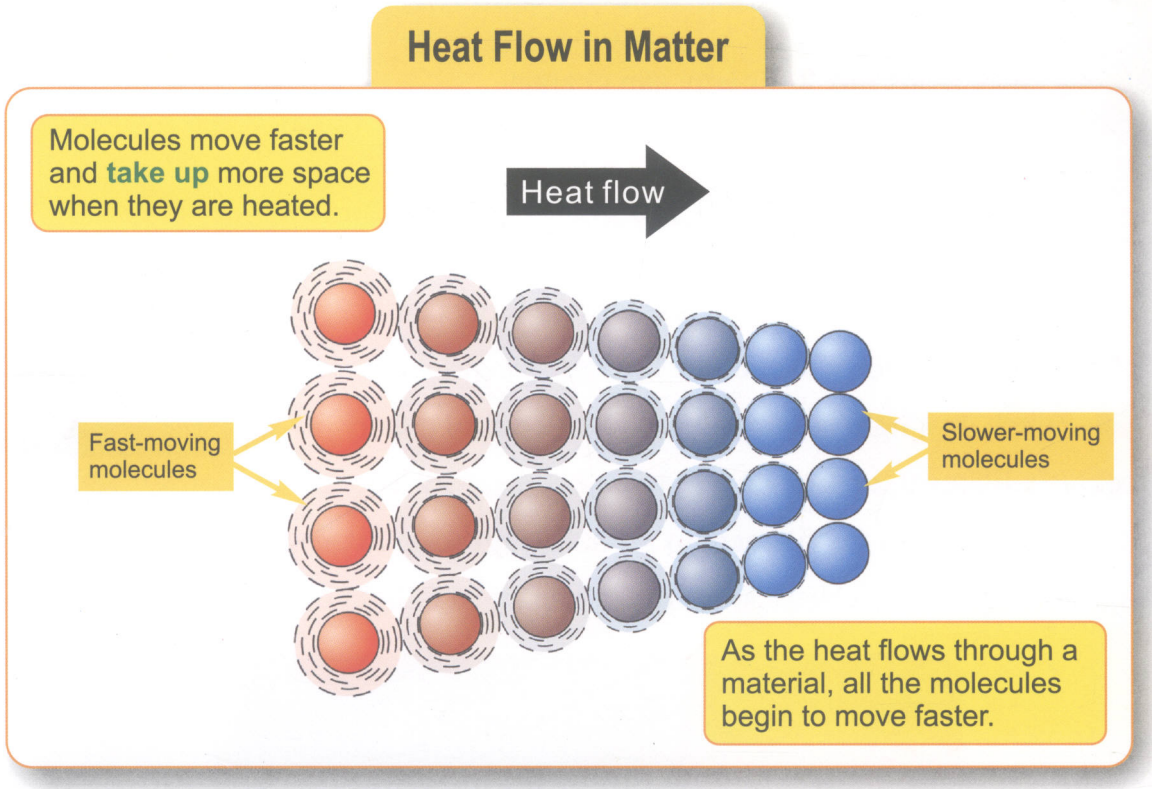
Chemical Energy

Have you ever seen someone light a candle on a birthday cake with a match? If you have, you have seen the use of chemical energy. Match heads **contain** special chemicals that have potential, or stored, energy. This energy is released when the match is lit.

Electrical Energy

Every time you **switch on** a light, you use electrical energy. **Electricity** involves the flow of electrons. An electron is one of the particles that **make up** an atom. This flow of electrons releases energy. Electrical energy travels to our homes along power lines. It is also stored in batteries.





Heat Energy

All objects are made up of molecules. These molecules move faster when they are heated. This is why a mug of hot chocolate warms you up on a cold day. The moving molecules of the hot chocolate **give off** heat energy. This warms your body as you drink. Heat energy always moves to a cooler place. Your body is cooler than the hot chocolate.

Light Energy

There is one type of energy that you can see. It is called light. Light energy travels in waves from a light source. The sun is the source of most light. But in your home, light bulbs are the main source of light.

阅读进阶词汇

give off 释放出
take up 占据

阅读参考词汇

molecules
/'mɒlɪkju:l/
*n.*分子

Key Concept 3 Energy can change from one form to another.

How Energy Changes

阅读参考词汇

filament /ˈfɪləmənt/
*n.*灯丝
glow /gləʊ/
*v.*发红

Energy does not always stay in one form. Energy can change from one form to another. Energy changes when you switch on a light in your home. The electrical energy causes a filament, or wire, in a light bulb to heat up. The heat energy causes the filament to glow. The glowing filament gives off light energy. So the electrical energy has changed to light energy.

Energy changes form when you switch on a light.

Energy can change form in different ways. A television uses electrical energy when it is plugged into an electrical outlet. The television changes the electrical energy into light energy and sound energy. The light energy comes out of the screen. It allows you to see the pictures on the television. The sound comes out of the television's speakers. It allows you to hear the television program.

When you turn on a television, electrical energy becomes sound and light energy.