

 High School 

English II

Preface

기술의 급격한 발전과 함께 다가온 디지털 시대를 맞이하여, 영어로 전달되는 다양한 분야의 지식과 정보를 이해하고 활용할 수 있는 능력은 더욱 중요해지고 있습니다. 영어 의사소통 능력은 세계인과 소통하고 그들의 문화를 이해하며, 폭넓은 교양과 지식을 쌓아 글로벌 리더로서 선도적 역할을 수행하는 데 중요한 도구가 될 것입니다.

본 교과서는 학생들이 사회생활이나 학업 및 진로와 관련된 일반적 주제에 대해 목적과 상황에 맞게 의사소통할 수 있는 영어 이해와 표현 능력을 함양하기 위해 개발되었습니다. 학생들의 개인적, 학문적, 사회문화 및 공동체적 관심을 고려하여 다양한 주제와 융합 교과적 소재를 선정하였고, 단위 별 Big Question 및 다섯 개의 하위 주제에 대해 깊이 생각해 보는 과정을 통해 비판적 사고력과 창의적 문제 해결 능력을 기를 수 있도록 구성하였습니다. 또한 이 교과서는 듣기, 말하기, 읽기, 쓰기 외에 매체 발달과 기술 변화에 따라 점점 중요성이 커지고 있는 보기와 제시하기와 같은 이해 및 표현 수단을 강조하여, 학생들이 다양한 방식으로 의사소통할 수 있는 역량을 기르도록 설계되었습니다. 각 단계별로 학생들이 자신의 학습을 스스로 계획하고 점검하며, 새로운 전략을 배워 주어진 자료와 정보를 이해 및 분석하는 데 적용하고, 단원의 마지막에 자신의 학습 과정과 태도를 성찰할 수 있게 함으로써 자기 주도적인 학습을 할 수 있도록 하였습니다.

여러분이 영어를 배우는 과정 자체를 즐기고, 지속적인 동기를 가지고 영어 학습을 이어 나가며, 다양한 주제와 내용을 다루는 데 필요한 언어 능력을 개발하는 데 이 교과서가 도움이 될 수 있기를 바랍니다. 이를 통해 여러분이 영어에 대한 자신감을 가지고 자신의 진로를 스스로 개척하며, 타 문화에 대한 이해와 존중을 바탕으로 지역과 국가, 세계 공동체에 기여하는 미래 사회의 인재로 성장하시길 기대합니다.

저자 일동

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Special Lesson

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Scope and Sequence

LESSON	Big Question	TOPIC 1 Listen & Speak	TOPIC 2 In Real Life
1 Build a Better World	How can we contribute to society?	Caring About My Community •도덕적 의무 표현하기 We are supposed to come together and lend a helping hand to others. •상기시키기 Don't forget to bring your student ID card to sign up.	Making a Change Together 장애인 인식 개선 캠페인을 소개하는 팟캐스트 듣기
2 The World of Scientific Discovery	How are scientific achievements made?	The Value of Failure •궁금증 표현하기 I'd be very interested to know. •요약하기 In short, inventors have achieved great things after many failures.	Seeing the Unseen 과학에서 관찰의 역할 및 중요성을 설명하는 강의 듣기
3 Life Is a Sum of Choices	How can we make better choices?	Seeking Advice •확실성 정도 표현하기 I'm not quite certain whether it would be a wise choice to go to the concert. •충고하기 If I were you, I would go to the concert and enjoy it.	Different Situations, Different Strategies 두 가지 선택 방법을 소개하는 인터뷰 듣기
4 Create a Greener Tomorrow	How can we build a sustainable future?	Being a Conscious Consumer •설명 요청하기 What do you mean by that? •권유하기 Why don't you check out other products with this logo?	Sustainable Living 친환경 도시 코펜하겐을 소개하는 프레젠테이션 듣기
5 Open Your Mind, Defeat Your Biases	How can we deal with biases and stereotypes?	Behind Your Thoughts •금지하기 We should not use that phrase. •의견 표현하기 It seems to me that it reinforces biases against people with disabilities.	Don't Judge a Book by Its Cover Human Library를 소개하는 라디오 방송 듣기
Special Lesson	The Model Millionaire Literature Oscar Wilde의 단편 소설 읽기		

TOPIC 3 Read	Focus on Language	TOPIC 4 View & Learn	TOPIC 5 Write & Share
Two Heroes Who Fought a Deadly Disease Science 백일해 백신 개발로 사회에 기여한 두 과학자에 관한 글 읽기	- The cause of the disease had been identified in 1906, but the vaccines that had been developed were ineffective. - They had each survived whooping cough as children themselves and remembered the severe pain of the disease.	Beyond Profits Social Studies 기업의 사회적 책임과 그 사례에 관한 영상 보기	Applying for Meaningful Work 봉사 활동 지원서 쓰기
Science Is for Everyone Science 시민이 참여하는 과학 프로젝트에 관한 글 읽기	It was online media that helped spread the word about Galaxy Zoo. If it had not been for those participants, Schawinski couldn't have classified that many images.	Science and Humanity Technology 인류를 위한 기술을 추구하는 과학자에 관한 영상 보기	An Invitation to a Sci-Fi World 공상 과학 영화에 대한 감상문 쓰기
There's More than One Way to Vote Social Studies 여러 가지 투표 시스템에 관한 글 읽기	- She encouraged them not to use the familiar voting method, but to try something different instead. Whichever we choose will have pros and cons.	When Past Choices Haunt You Economics 매물 비용 오류의 개념과 예시를 소개하는 영상 보기	Weighing Your Options 여러 선택지를 비교하는 글 쓰기
Breaking the Cycle: Solutions to E-waste Environment 전자 쓰레기를 줄이기 위한 세 가지 대응책을 소개하는 글 읽기	- Its manufacturer may require that it be brought to an official service center to be fixed. - This movement is gaining a growing influence in Europe as well, with more and more countries joining the cause.	Transformations in Agriculture Technology 네덜란드의 지속 가능한 농업 기술에 관한 영상 보기	Analyzing Environmental Issues 환경 관련 그래프를 분석하는 글 쓰기
The Colorful Truth About Ancient Sculptures Art 그리스·로마 조각상에 대한 편견에 관한 글 읽기	- Their research showed undeniable evidence that its smooth surface was not always left bare. - Over a period of more than 1,000 years, much of the paint with which these sculptures were originally decorated wore off.	The Way We Interpret the World Psychology 생존자 편향의 개념과 그에 관한 사례를 소개하는 영상 보기	Combating Misconceptions 편견, 고정관념 등에 맞서 싸운 인물에 대한 전기문 쓰기

Introduction



QR코드 스캔

- **Listen & Speak, In Real Life, Wrap Up** 듣기 활동의 음원을 들을 수 있습니다.
- **Read** 본문 전체 듣기, 본문 페이지별 듣기를 할 수 있습니다.
- **View & Learn** 영상을 시청할 수 있습니다.

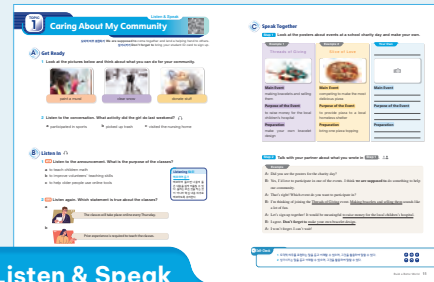
이 책의 특징

- 단원 전체를 관통하는 Big Question을 중심으로 영역별 내용을 연속적이고 통합적으로 학습 가능
- 인문, 과학, 예술 등 다양한 영역의 소재를 다룸으로써 교과 간 통합 학습 및 융합적 사고 유도
- 실생활 중심의 소재와 다양한 시청각 자료를 통한 학습으로 의사소통 능력 신장
- SNS, 블로그, 인터넷 영상 등 디지털 매체로 된 글이나 말을 통해 디지털 지식 정보를 이해하고 분석하는 능력 함양



Lesson Map

- 단원명 및 관련 이미지를 통해 단원의 전체적인 주제를 파악한다.
- 단원에서 학습할 의사소통 기능과 언어 형식을 확인한다.
- Big Question과 다섯 가지 Topic을 보고 단원의 흐름을 파악한다.



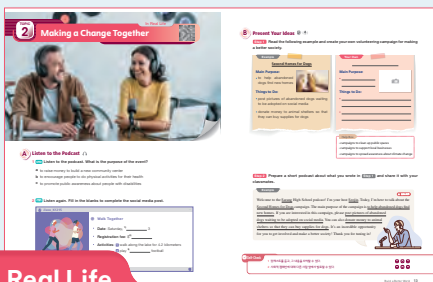
Listen & Speak

Get Ready ▶ Listen In ▶ Speak Together

- 의사소통 기능이 포함된 대화나 담화를 듣고 그 주제 및 세부 내용을 파악한다.
- 다양한 듣기, 말하기, 쓰기 통합 활동을 한다.

Listening Skill

다양한 듣기 전략을 학습한다.



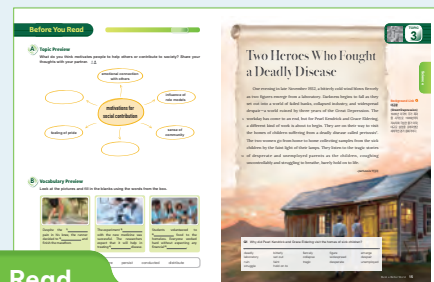
In Real Life

Listen to the (Podcast) ▶ Present Your Ideas

- 실생활에서 접할 수 있는 팟캐스트, 강의, 인터뷰 등을 듣고 그 내용을 파악한다.
- 자신의 경험이나 생각을 다양한 매체의 표현 방식에 맞게 말해 보는 활동을 한다.

Speaking Skill

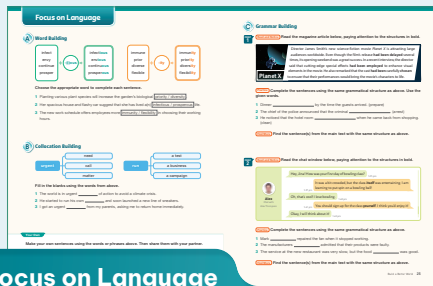
다양한 말하기 전략을 학습한다.



Read

Before You Read ▶ Read ▶ After You Read

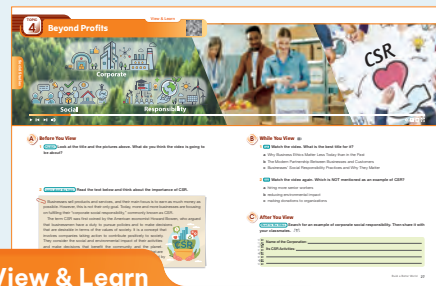
- 본격적인 읽기 활동에 앞서 소재에 대한 흥미를 유발하고, 핵심 단어와 표현의 의미를 파악한다.
- 적합한 읽기 전략을 활용하여 다양한 구조의 지문을 읽고, 그 내용을 종합적으로 이해한다.
- 지문을 읽은 후 이해도를 확인하고, 지문 내용을 자신에게 적용하거나 추가적인 정보를 찾는 등 심화 활동을 한다.



Focus on Language

Word Building ▶ Collocation Building ▶ Grammar Building

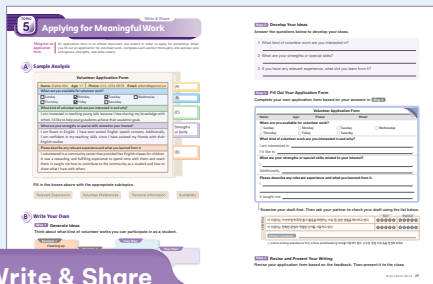
- 읽기 지문에 사용된 단어의 접미사, 접두사 및 언어에 대해 깊이 있게 학습한다.
- 읽기 지문에서 학습한 언어 형식을 잡지, 문자 메시지, 광고 등 다양한 형식의 글에서 다시 확인하고, 직접 문장을 구성하는 연습을 한다.
- 읽기 지문에서 해당 언어 형식의 예를 찾아보며 반복 학습한다.



View & Learn

Before You View ▶ While You View ▶ After You View

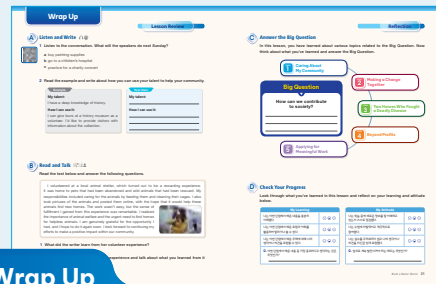
- 영상을 시청하기 전, 관련 이미지를 보고 내용을 예상해 보고 배경 지식을 활성화한다.
- 단원의 주제와 관련된 영상을 시청하며 그 내용을 종합적으로 이해한다.
- 영상 시청 후 토론, 조사 등의 확장 활동을 통해 주제를 더욱 깊이 탐구한다.



Write & Share

Sample Analysis ▶ Write Your Own

- 예시 글을 보며 다양한 장르의 글의 구조 및 특성을 이해하고 관련 표현을 익힌다.
- 자신의 의견과 경험을 토대로 해당 장르의 글을 직접 써 본다.
- 온라인 툴을 활용하여 글을 점검하고, 자가 평가와 동료 평가를 통해 글을 수정한다.



Wrap Up

Lesson Review ▶ Reflection

- 듣고 쓰기, 읽고 말하기 등의 통합 활동을 통해 단원에서 학습한 내용을 재점검하고 의사소통 기능과 언어 형식을 복습한다.
- 단원 전체의 내용을 떠올리며 Big Question에 대한 답변을 도출하고, 자신의 학습 과정을 성찰한다.

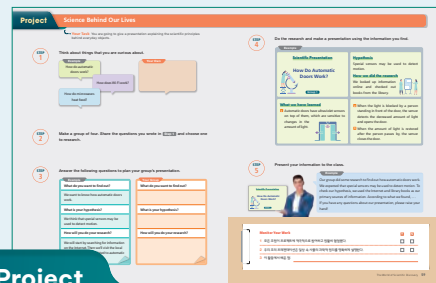


Dive into Culture

- 단원 주제와 관련된 세계의 다양한 문화에 대해 읽으며 타 문화에 대한 포용적인 태도와 문화적 감수성을 향상한다.

Explore Further

주제와 관련된 다른 사례를 찾아보며 정보 활용 능력을 기른다.



Project

- 모둠 활동을 통해 결과물을 만들어 내고 이를 발표하는 과제를 수행하며 창의적 문제 해결 능력 및 협력적인 태도를 기른다.

Monitor Your Work

모둠 활동 과정과 결과를 평가하며 배운 점을 성찰한다.



듣기



말하기



읽기



쓰기



영상 보기



검색



짝 활동



모둠 활동

Build a Better World

Study Points

Functions

- 도덕적 의무 표현하기

We are supposed to come together and lend a helping hand to others.

- 상기시키기

Don't forget to bring your student ID card to sign up.

Structures

- The cause of the disease **had been identified** in 1906, but the vaccines that **had been developed** were ineffective.
- They had each survived whooping cough as children **themselves** and remembered the severe pain of the disease.

Big Question

How can we contribute to society?

TOPIC

1

Listen & Speak

Caring About My Community



TOPIC

2

In Real Life

Making a Change Together



TOPIC

3

Read

Two Heroes Who Fought a Deadly Disease



TOPIC

4

View & Learn

Beyond Profits



TOPIC

5

Write & Share

Applying for Meaningful Work

Science

Social Studies

Caring About My Community



도덕적 의무 표현하기 We are supposed to come together and lend a helping hand to others.
상기시키기 Don't forget to bring your student ID card to sign up.

A Get Ready

1 Look at the pictures below and think about what you can do for your community.



paint a mural



clear snow



donate stuff

2 Listen to the conversation. What activity did the girl do last weekend? 🎧

- a participated in sports b picked up trash c visited the nursing home

B Listen In 🎧

1 (1st) Listen to the announcement. What is the purpose of the classes?

- a to teach children math
b to improve volunteers' teaching skills
c to help older people use online tools

Listening Skill

메모하며 듣기

메모하며 들으면 나중에 들은 내용을 쉽게 떠올릴 수 있다. 들리는 모든 것을 적는 것이 아니라 핵심 내용 위주로 메모하도록 유의한다.

2 (2nd) Listen again. Which statement is true about the classes?

a



The classes will take place online every Thursday.

b



Prior experience is required to teach the classes.

c



Volunteers should bring their own laptops.

C Speak Together

Step 1 Look at the posters about events at a school charity day and make your own.

Example 1	Example 2	Your Own
Threads of Giving  Main Event making bracelets and selling them Purpose of the Event to raise money for the local children's hospital Preparation make your own bracelet design	Slice of Love  Main Event competing to make the most delicious pizza Purpose of the Event to provide pizza to a local homeless shelter Preparation bring one pizza topping	 Main Event Purpose of the Event Preparation

Step 2 Talk with your partner about what you wrote in **Step 1**. 

Example

A: Did you see the posters for the charity day?

B: Yes, I'd love to participate in one of the events. I think **we are supposed to** do something to help our community.

A: That's right! Which event do you want to participate in?

B: I'm thinking of joining the Threads of Giving event. Making bracelets and selling them sounds like a lot of fun.

A: Let's sign up together! It would be meaningful to raise money for the local children's hospital.

B: I agree. **Don't forget to** make your own bracelet design.

A: I won't forget. I can't wait!

Self-Check

- 1 도덕적 의무를 표현하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.
- 2 상기시키는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.



Making a Change Together



A

Listen to the Podcast 🎧

1 **1st** Listen to the podcast. What is the purpose of the event?

- a to raise money to build a new community center
- b to encourage people to do physical activities for their health
- c to promote public awareness about people with disabilities

2 **2nd** Listen again. Fill in the blanks to complete the social media post.

Jisoo_K1215
...

Walk Together

✓ **Walk Together**

- Date:** Saturday, ¹⁾ _____ 3
- Registration fee:** \$²⁾ _____
- Activities:** 1 walk along the lake for 4.2 kilometers
2 play ³⁾ _____ football

#Walk_Together

♡
💬
🔍

🔖

B

Present Your Ideas

Step 1 Read the following example and create your own volunteering campaign for making a better society.

Example

Second Homes for Dogs

Main Purpose:

- to help abandoned dogs find new homes



Things to Do:

- post pictures of abandoned dogs waiting to be adopted on social media
- donate money to animal shelters so that they can buy supplies for dogs

Your Own

Main Purpose:

- _____
- _____



Things to Do:

- _____
- _____
- _____

Help Box

- campaigns to clean up public spaces
- campaigns to support local businesses
- campaigns to spread awareness about climate change

Step 2 Prepare a short podcast about what you wrote in **Step 1** and share it with your classmates.

Example

ON AIR

Welcome to the Sarang High School podcast! I'm your host Seojin. Today, I'm here to talk about the Second Homes for Dogs campaign. The main purpose of the campaign is to help abandoned dogs find new homes. If you are interested in this campaign, please post pictures of abandoned dogs waiting to be adopted on social media. You can also donate money to animal shelters so that they can buy supplies for dogs. It's an incredible opportunity for you to get involved and make a better society! Thank you for tuning in!



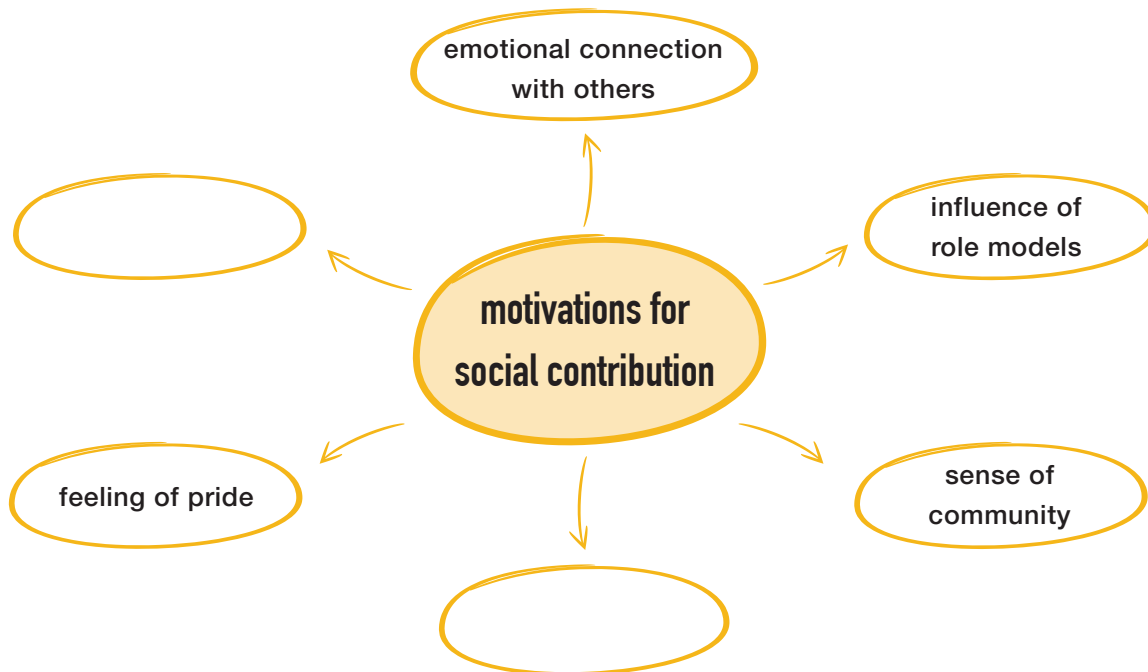
Self-Check

- 1 팟캐스트를 듣고, 그 내용을 파악할 수 있다.
- 2 사회적 캠페인에 대해 다른 사람 앞에서 발표할 수 있다.



A Topic Preview

What do you think motivates people to help others or contribute to society? Share your thoughts with your partner. 👤



B Vocabulary Preview

Look at the pictures and fill in the blanks using the words from the box.



Despite the ¹⁾ _____ pain in his knee, the runner decided to ²⁾ _____ and finish the marathon.



The experiment ³⁾ _____ with the new medicine was successful. The researchers expect that it will help in treating ⁴⁾ _____ disease.



Students volunteered to ⁵⁾ _____ food to the homeless. Everyone worked hard without expecting any financial ⁶⁾ _____.

reward infectious severe persist conducted distribute



Two Heroes Who Fought a Deadly Disease

One evening in late November 1932, a bitterly cold wind blows fiercely as two figures emerge from a laboratory. Darkness begins to fall as they set out into a world of failed banks, collapsed industry, and widespread despair—a world ruined by three years of the Great Depression. The workday has come to an end, but for Pearl Kendrick and Grace Eldering, a different kind of work is about to begin. They are on their way to visit the homes of children suffering from a deadly disease called pertussis*. The two women go from home to home collecting samples from the sick children by the faint light of their lamps. They listen to the tragic stories of desperate and unemployed parents as the children, coughing uncontrollably and struggling to breathe, barely hold on to life.

*pertussis 백일해

Background Link

대공황

(Great Depression)

1929년 미국의 주가 폭락을 시작으로 1939년까지 지속되며 극심한 물가 하락, 대규모 실업을 초래하였던 세계적인 경기 침체기이다.

Q1 Why did Pearl Kendrick and Grace Eldering visit the homes of sick children?

deadly
laboratory
ruin
struggle

bitterly
set out
faint
hold on to

fiercely
collapse
tragic

figure
widespread
desperate

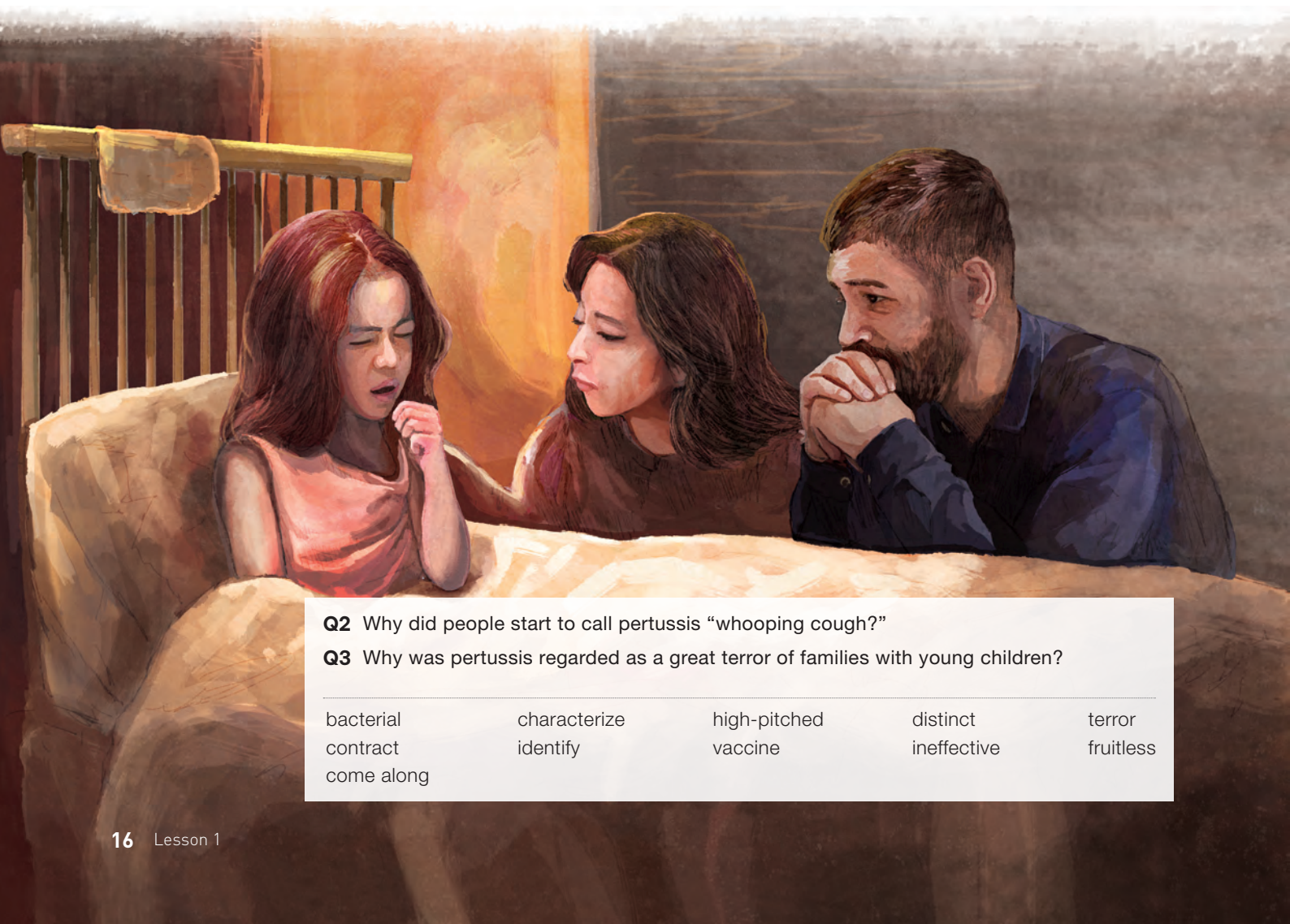
emerge
despair
unemployed

Reading Strategy

Understanding the Sequence of Events

글의 흐름을 잘 이해하기 위해 사건의 시간적 순서를 파악하며 글을 읽는다. In the 1930s, after, four years later와 같은 표현에 주목한다.

Pertussis is a bacterial disease characterized by serious coughing, breathing difficulties, and the high-pitched “whooping” sound that people with the disease make as they try to breathe in. Because of this distinct sound, people started to call the disease “whooping cough.” For a long time, this terrible illness was one of the greatest terrors of families with young children, because babies who contracted it had a high chance of dying. In the 1930s, an average of 6,000 people died of whooping cough in the United States each year. Ninety-five percent of them were children under five years of age. The cause of the disease had been identified in 1906, but the vaccines that had been developed were ineffective. Scientists and researchers worked for more than 20 years to produce an effective one, but their efforts were fruitless – until Kendrick and Eldering came along.



Q2 Why did people start to call pertussis “whooping cough?”

Q3 Why was pertussis regarded as a great terror of families with young children?

bacterial

characterize

high-pitched

distinct

terror

contract

identify

vaccine

ineffective

fruitless

come along

Pearl Kendrick studied bacteriology in university and was recruited by the Michigan Department of Health in 1920. It was there that she met fellow bacteriologist Grace Eldering.

5 The two quickly bonded, and in 1932 they started working together on a vaccine for whooping cough. Personal experience served as motivation for both of them, as they had each survived whooping cough as children themselves and remembered the
10 severe pain of the disease. Both scientists were also eager to promote children's health.

Unfortunately, research funding was extremely limited due to the Great Depression. Also, Kendrick and Eldering had to develop the vaccine as a side project. It was like having a
15 second job for which they never received any payment. Still, when they finished their normal duties each day, they would get started on the work that they were enthusiastic about. The difficulties they faced did not stop them from persisting
20 toward their goal. They did not do the work to make extra money; instead, they worked to relieve the suffering of innocent children and their families.

Q4 What personal experience motivated Kendrick and Eldering to work on the vaccine?

Q5 Check T for true or F for false.

Kendrick and Eldering received extra payment for developing the vaccine. (T ☐ / F ☐)

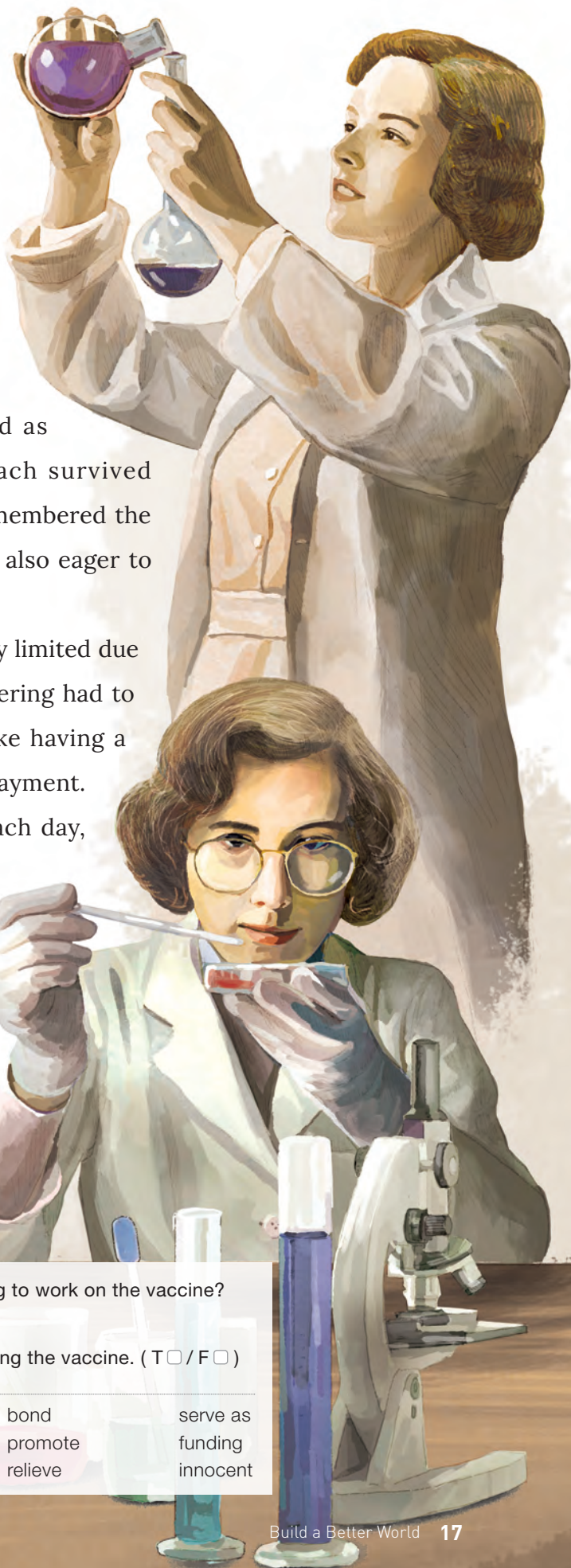
bacteriology
motivation
duty

recruit
severe
enthusiastic

fellow
eager
persist

bond
promote
relieve

serve as
funding
innocent



They began the process of developing their vaccine by gathering samples of the bacteria that cause whooping cough. To support them, local doctors and nurses provided “cough plates” from their patients. The patients coughed onto a petri dish*, which was then put into an incubator. This allowed the bacteria to grow into colonies that Kendrick and Eldering could analyze. When they collected samples on their own, they would go to the homes of sick children. Each time, they were reminded once again of the dreadful suffering caused by the disease. The sight of these innocent young victims coughing and struggling to breathe was a powerful reminder of the urgent need for an effective vaccine. 5 10

Kendrick and Eldering spent many long nights studying the bacteria and finally produced a potential vaccine. Before they performed any clinical trials, though, they had to be certain that it would not have any negative side effects on the subjects. They ran many laboratory tests, and they even injected it into themselves to confirm that it was safe. From 15 1934 to 1935, they conducted their first field test with 1,592 children. In the group of 712 vaccinated children, only four developed whooping cough, and none of these cases were serious.

*petri dish 페트리 접시(실험용으로 쓰이는 둥글고 낮은 접시)



Q6 **Over to You** What can you infer from Kendrick and Eldering’s willingness to test their vaccine on themselves?

process	incubator	colony	analyze	dreadful
victim	urgent	potential	clinical	trial
side effect	inject	confirm	conduct	field test

Despite the apparent success of the vaccine, Kendrick and Eldering wanted further confirmation of its effectiveness. They became determined to expand their research and run more tests with larger groups of children. However, they were unable to proceed because they were facing a severe lack of funds. With thousands of children continuing to suffer from the disease, they found themselves in a desperate situation.

Luckily, they got help from an unexpected figure. In 1936, First Lady Eleanor Roosevelt herself visited the laboratory and saw with her own eyes the efforts that Kendrick and Eldering were making in their battle against whooping cough. Eleanor Roosevelt, whose husband suffered from polio*, was interested in fighting infectious diseases. She spent time with the women and came to realize the enormous importance of their work. With her help, Kendrick and Eldering were able to secure enough funding to conduct a large-scale trial.

Background Link

**엘리노어 루스벨트
(Eleanor Roosevelt)**

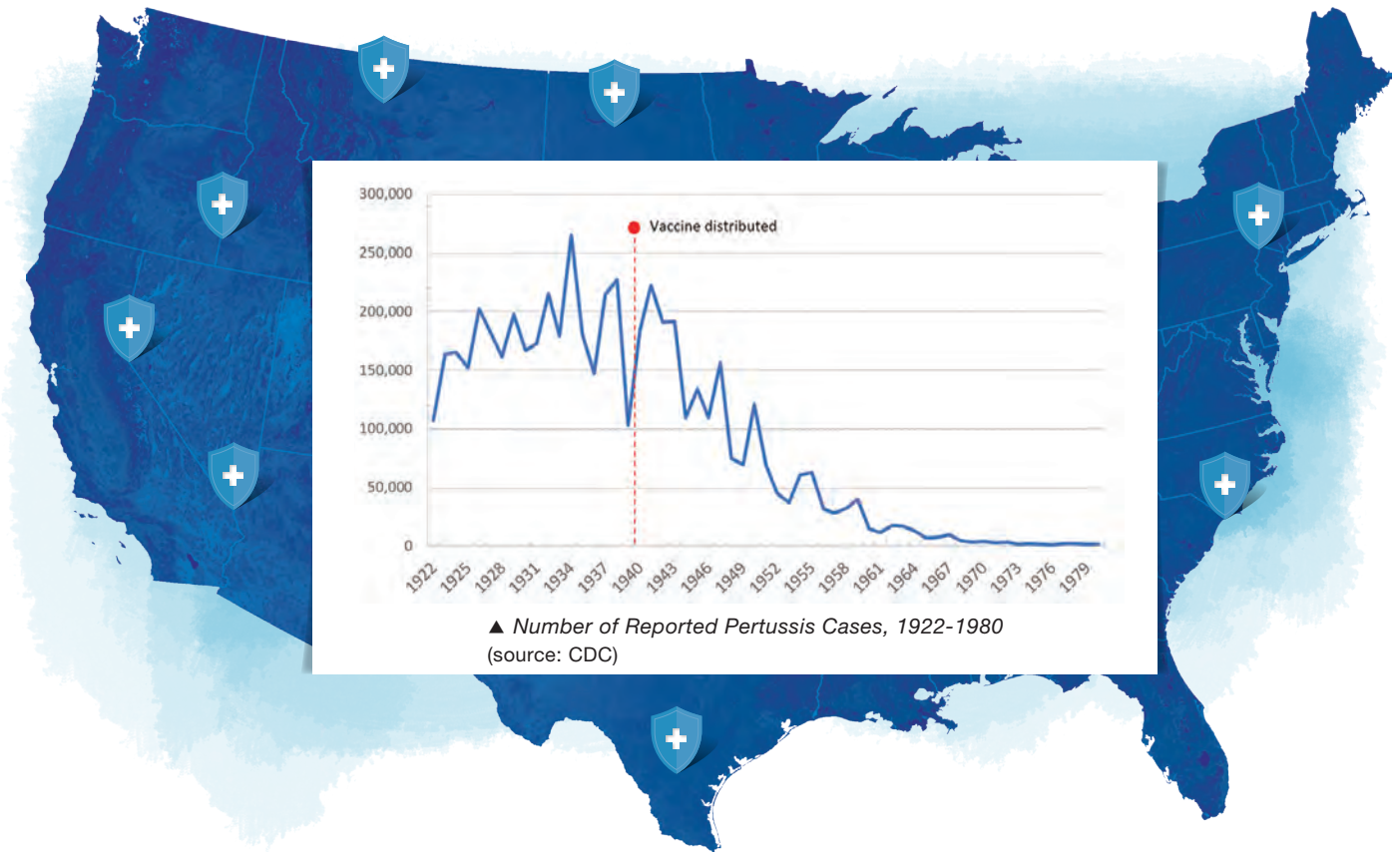
미국의 제32대 대통령인 프랭클린 루스벨트(Franklin Roosevelt)의 배우자이다. 루스벨트 대통령이 대공황에 대처하기 위하여 시행한 경제 부흥 정책인 '뉴딜 정책'을 국민에게 홍보하기 위해 전국을 돌며 강연을 하거나, 경제적 도움이 필요한 지역을 직접 방문하기도 했다.

*polio 소아마비



Q7 How were Kendrick and Eldering able to secure funding for a large-scale trial?

apparent	determined	expand	proceed	unexpected
infectious	enormous	secure		



By 1937, Kendrick and Eldering were able to include more than 4,200 children in their trial. Just as in their first field test, the vaccinated group demonstrated a high level of immunity against the disease. The scientific community was amazed at the results, and, in 1940, the vaccine started being distributed all across the United States. Four years later, it was added to the American Medical Association's list of recommended immunizations, and soon after, there was a dramatic decline in whooping cough infections. In the mid-1970s, the number of annual deaths caused by whooping cough, which had reached 7,518 in 1934, dropped to under 10.

10

Q8 **Apply the Strategy** Number the events in the order in which they occurred.

- ☐ The vaccine was distributed all over the country.
- ☐ The vaccine was added to the list of recommended immunizations.
- ☒ 1 First Lady Eleanor Roosevelt visited Kendrick and Eldering's laboratory.
- ☐ Kendrick and Eldering performed a large-scale test with over 4,000 children.

Q9 **Over to You** How do you think Kendrick and Eldering felt when their vaccine led to a dramatic decline in whooping cough infections?

demonstrate

immunity

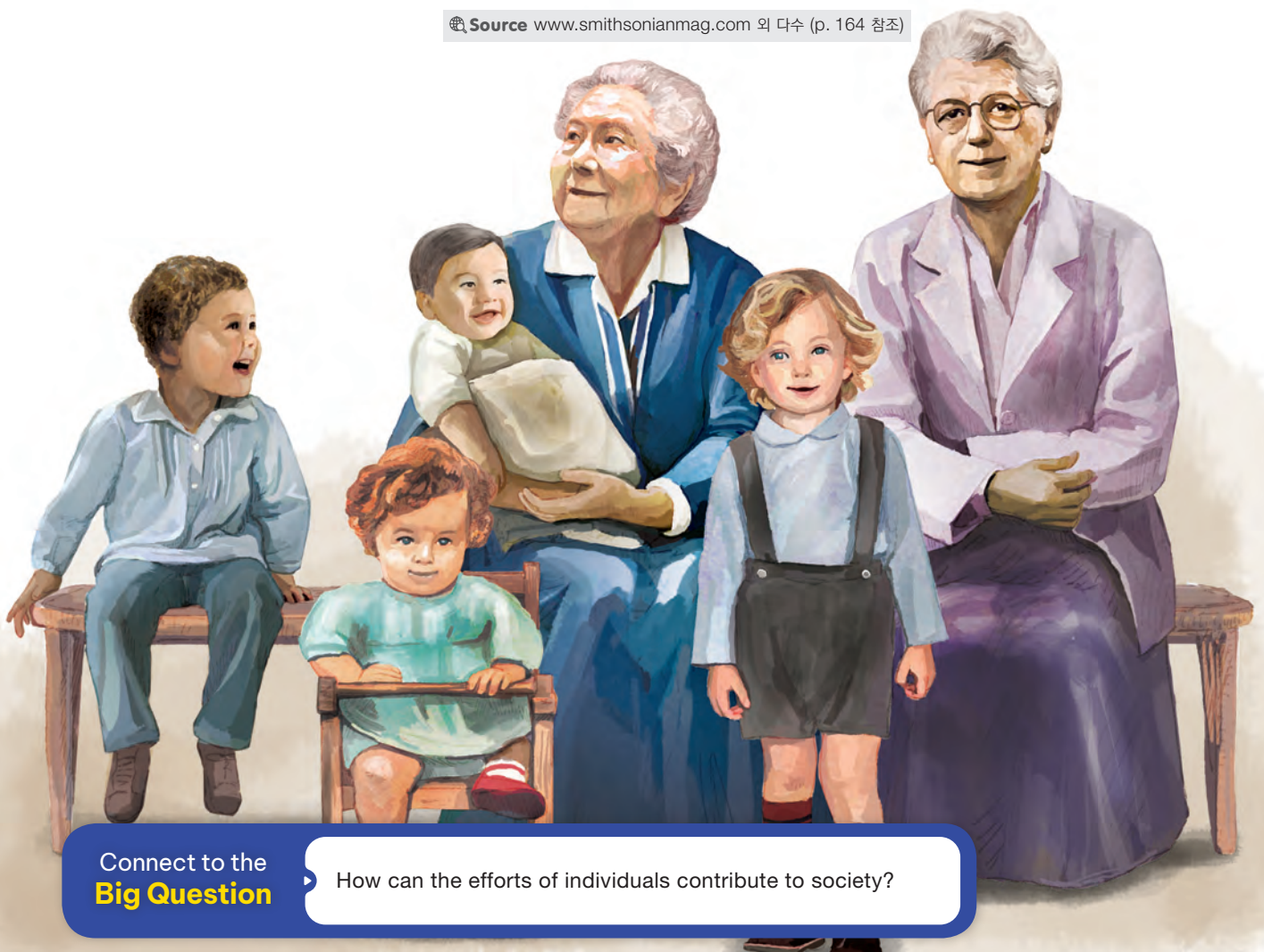
distribute

decline

annual

Kendrick and Eldering were often told that they could have become very wealthy if they had patented their vaccine. However, they replied that it had not been created by them alone, but with the help of many others. They also avoided personal interviews, not wanting to reveal the
 5 great contribution they had made. They said that they had genuinely enjoyed the challenge of creating the vaccine, so the excessive praise that they received made them uncomfortable. In the end, knowing that so many lives were being saved thanks to their hard work was enough of a reward for these remarkable and modest heroes.

Source www.smithsonianmag.com 외 다수 (p. 164 참조)



Connect to the
Big Question

How can the efforts of individuals contribute to society?

wealthy
 excessive

patent
 praise

reveal
 reward

contribution
 remarkable

genuinely
 modest

A Summarize the Text

Fill in the blanks using the words or phrases from the box to summarize the main text.

The Scientists

Monday, February 11

Two Heroes Who Saved Countless Lives

Pertussis, also known as ¹⁾_____, is a disease that causes coughing followed by a “whooping” sound. In 1932, two ²⁾_____, Pearl Kendrick and Grace Eldering, started to develop a vaccine for the disease. They faced challenges such as a lack of ³⁾_____ for their research, but they never stopped working on the vaccine.

In 1934, after running many tests to confirm that the vaccine had no negative ⁴⁾_____, Kendrick and Eldering started the first ⁵⁾_____ of the whooping cough vaccine. It involved 1,592 children, and only four of 712 children in the ⁶⁾_____ group developed whooping cough.

With the help of Eleanor Roosevelt, they secured funding and conducted a large-scale trial. Once again, the ⁷⁾_____ of the vaccine was confirmed. Kendrick and Eldering’s vaccine started being ⁸⁾_____ across the nation in 1940, and it quickly lowered the number of infections.

funding	vaccinated	whooping cough	field test
bacteriologists	effectiveness	side effects	distributed

B Check Out the Details

Read the statements and check T for true or F for false based on the main text.

- | | T | F |
|---|--------------------------|--------------------------|
| 1 Pertussis caused an average of 6,000 deaths annually in the 1930s, mostly among young children. | ☐ | ☐ |
| 2 Kendrick and Eldering both suffered from whooping cough when they were young. | ☐ | ☐ |
| 3 In the mid-1970s, there were fewer than 10 deaths due to whooping cough per year. | ☐ | ☐ |
| 4 Kendrick and Eldering made a lot of money by patenting their vaccine. | ☐ | ☐ |

C Dive Deeper

In the story of Pearl Kendrick and Grace Eldering, what impressed you the most? Share your thoughts with your partner. 



Jenny0116

11 Like 3 Reply

The fact that they willingly spent their personal time on vaccine development without any compensation was impressive and admirable. I think it shows how committed they were.



Sunho_K

7 Like 5 Reply

I was impressed with their courage. They met the patients in person to collect the samples despite the risk of infection. They also injected the potential vaccine into themselves. I think most people would be too afraid to do this.



Your Own



D Broaden Your View

Read the following example and search for another person who contributed to society by improving public health. Then share it with your classmates. 

SEARCH medical discoveries or inventions 

Example

Who is the person?

Wilhelm Röntgen (1845-1923),
a German physicist



What did he do?

He discovered a new form of radiation that can pass through human bodies and other objects, which we now call "X-rays."

How did it improve public health?

X-rays allowed doctors to see inside the human body, leading to more detailed examinations of problems and illnesses. They have been widely used and have saved many lives.

Your Own

Who is the person?

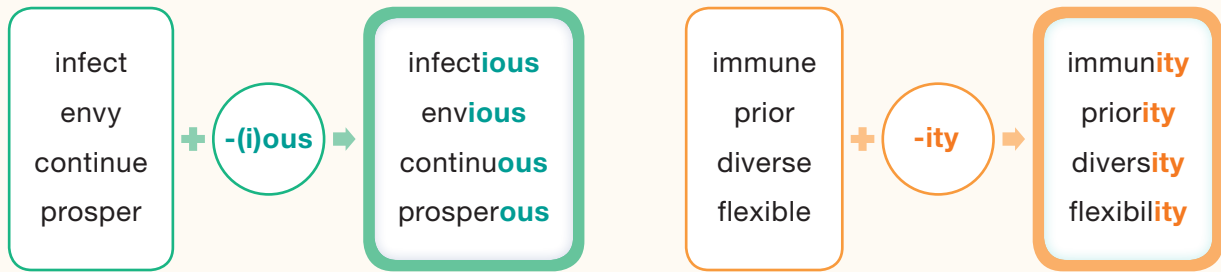


What did he/she do?

How did it improve public health?

Focus on Language

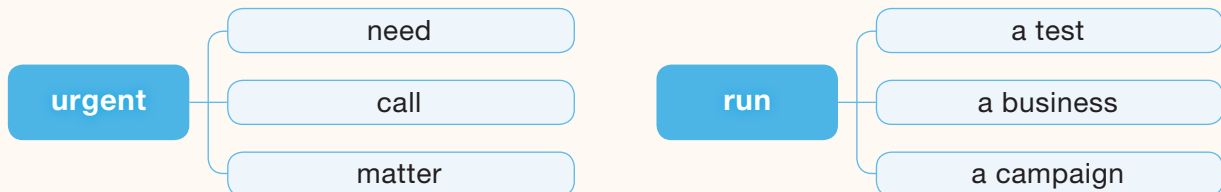
A Word Building



Choose the appropriate word to complete each sentence.

- 1 Planting various plant species will increase the garden's biological priority / diversity.
- 2 Her spacious house and flashy car suggest that she has lived a(n) infectious / prosperous life.
- 3 The new work schedule offers employees more immunity / flexibility in choosing their working hours.

B Collocation Building



Fill in the blanks using the words from above.

- 1 The world is in urgent _____ of action to avoid a climate crisis.
- 2 He started to run his own _____ and soon launched a new line of sneakers.
- 3 I got an urgent _____ from my parents, asking me to return home immediately.

Your Own

Make your own sentences using the words or phrases above. Then share them with your partner.

- 1 _____
- 2 _____



Grammar Building

POINT
1

Read and Notice Read the magazine article below, paying attention to the structures in bold.



Planet X

Director James Smith's new science-fiction movie *Planet X* is attracting large audiences worldwide. Even though the film's release **had been delayed** several times, its opening weekend was a great success. In a recent interview, the director said that cutting-edge special effects **had been employed** to enhance visual elements in the movie. He also remarked that the cast **had been carefully chosen** to ensure that their performances would bring the movie's characters to life.

Practice Complete the sentences using the same grammatical structure as above. Use the given words.

- 1 Dinner _____ by the time the guests arrived. (prepare)
- 2 The chief of the police announced that the criminal _____. (arrest)
- 3 He noticed that the hotel room _____ when he came back from shopping. (clean)

Find More Find the sentence(s) from the main text with the same structure as above.

POINT
2

Read and Notice Read the chat window below, paying attention to the structures in bold.



Alex
Chat with
Alex Thompson

Hey, Jina! How was your first day of bowling class? 1:35 pm

It was a bit crowded, but the class **itself** was entertaining. I am learning to put spin on a bowling ball! 1:37 pm

Oh, that's cool! I love bowling. 1:40 pm

You should sign up for the class **yourself**. I think you'd enjoy it! 1:41 pm

Okay, I will think about it! 1:43 pm

Practice Complete the sentences using the same grammatical structure as above.

- 1 Mark _____ repaired the fan when it stopped working.
- 2 The manufacturers _____ admitted that their products were faulty.
- 3 The service at the new restaurant was very slow, but the food _____ was good.

Find More Find the sentence(s) from the main text with the same structure as above.



Beyond Profits



Corporate



Social



Responsibility



A

Before You View

- 1 **Predict** Look at the title and the pictures above. What do you think the video is going to be about?

- 2 **Learn about the Topic** Read the text below and think about the importance of CSR.

Businesses sell products and services, and their main focus is to earn as much money as possible. However, this is not their only goal. Today, more and more businesses are focusing on fulfilling their “corporate social responsibility,” commonly known as CSR.

The term CSR was first coined by the American economist Howard Bowen, who argued that businessmen have a duty to pursue policies and to make decisions that are desirable in terms of the values of society. It is a concept that involves companies taking action to contribute positively to society. They consider the social and environmental impact of their activities and make decisions that benefit the community and the planet. Because CSR is becoming increasingly important, businesses that are seen as being socially responsible are more likely to be supported by customers and investors.





B

While You View

- 1 **1st** Watch the video. What is the best title for it?
 - a Why Business Ethics Matter Less Today than in the Past
 - b The Modern Partnership Between Businesses and Customers
 - c Businesses' Social Responsibility Practices and Why They Matter

- 2 **2nd** Watch the video again. Which is NOT mentioned as an example of CSR?
 - a hiring more senior workers
 - b reducing environmental impact
 - c making donations to organizations

C

After You View

React to the Video Search for an example of corporate social responsibility. Then share it with your classmates. 








Name of the Corporation: _____

Its CSR Activities: _____

Applying for Meaningful Work

Filling Out an Application Form

An application form is an official document you submit in order to apply for something. When you fill out an application for volunteer work, complete each section thoroughly and express your willingness, strengths, and skills clearly.

A Sample Analysis

Volunteer Application Form			
Name: Eunho Kim	Age: 17	Phone: 012-1234-5678	Email: ehkim@appmail.co
When are you available for volunteer work?			
☐ Sunday	☒ Monday	☒ Tuesday	☐ Wednesday
☐ Thursday	☒ Friday	☐ Saturday	
What kind of volunteer work are you interested in and why?			
I am interested in teaching young kids because I love sharing my knowledge with others. I'd like to help young students achieve their academic goals.			
What are your strengths or special skills related to your interest?			
I am fluent in English. I have won several English speech contests. Additionally, I am confident in my teaching skills, since I have assisted my friends with their English studies.			
Please describe any relevant experience and what you learned from it.			
I volunteered in a community center that provided free English classes for children. It was a rewarding and fulfilling experience to spend time with them and teach them. It taught me how to contribute to the community as a student and how to share what I have with others.			

(A)

(B)

(C)

Strengths or Skills

(D)

Fill in the boxes above with the appropriate subtopics.

Relevant Experience

Volunteer Preferences

Personal Information

Availability

B Write Your Own

Step 1 Generate Ideas

Think about what kind of volunteer works you can participate in as a student.

Example 1

cleaning up
local parks

Example 2

helping older people
at a care center

Your Own

Your Own

Step 2 Develop Your Ideas

Answer the questions below to develop your ideas.

- 1 What kind of volunteer work are you interested in?

- 2 What are your strengths or special skills?

- 3 If you have any relevant experience, what did you learn from it?

Step 3 Fill Out Your Application Form

Complete your own application form based on your answers in **Step 2**.

Volunteer Application Form			
Name:	Age:	Phone:	Email:
When are you available for volunteer work?			
☐ Sunday	☐ Monday	☐ Tuesday	☐ Wednesday
☐ Thursday	☐ Friday	☐ Saturday	
What kind of volunteer work are you interested in and why?			
I am interested in _____.			
I'd like to _____.			
What are your strengths or special skills related to your interest?			
I _____.			
Additionally, _____.			
Please describe any relevant experience and what you learned from it.			
I _____.			

It taught me _____.			

- Examine your draft first. Then ask your partner to check your draft using the list below.

Checklist		Self	Partner
		☆☆☆☆☆	☆☆☆☆☆
	이 지원서는 서식에 맞게 특정 봉사 활동을 희망하는 이유 및 관련 경험을 제시하고 있다.	☆☆☆☆☆	☆☆☆☆☆
	이 지원서는 정확한 문법과 적절한 단어를 사용하고 있다.	☆☆☆☆☆	☆☆☆☆☆
	Partner's Comment _____		

☒ online writing assistance 또는 online proofreading tool을 이용해서 철자, 구두점, 문법 오류 등을 점검해 보세요.

Step 4 Revise and Present Your Writing

Revise your application form based on the feedback. Then present it to the class.

A

Listen and Write



1 Listen to the conversation. What will the speakers do next Sunday?

- a buy painting supplies
- b go to a children's hospital
- c practice for a charity concert

2 Read the example and write about how you can use your talent to help your community.

Example

My talent:

I have a deep knowledge of history.

How I can use it:

I can give tours at a history museum as a volunteer. I'd like to provide visitors with information about the collection.

Your Own

My talent:

How I can use it:

B

Read and Talk

Read the text below and answer the following questions.

I volunteered at a local animal shelter, which turned out to be a rewarding experience. It was home to pets that had been abandoned and wild animals that had been rescued. My responsibilities included caring for the animals by feeding them and cleaning their cages. I also took pictures of the animals and posted them online, with the hope that it would help these animals find new homes. The work wasn't easy, but the sense of fulfillment I gained from this experience was remarkable. I realized the importance of animal welfare and the urgent need to find homes for helpless animals. I am genuinely grateful for the opportunity I had, and I hope to do it again soon. I look forward to continuing my efforts to make a positive impact within our community.

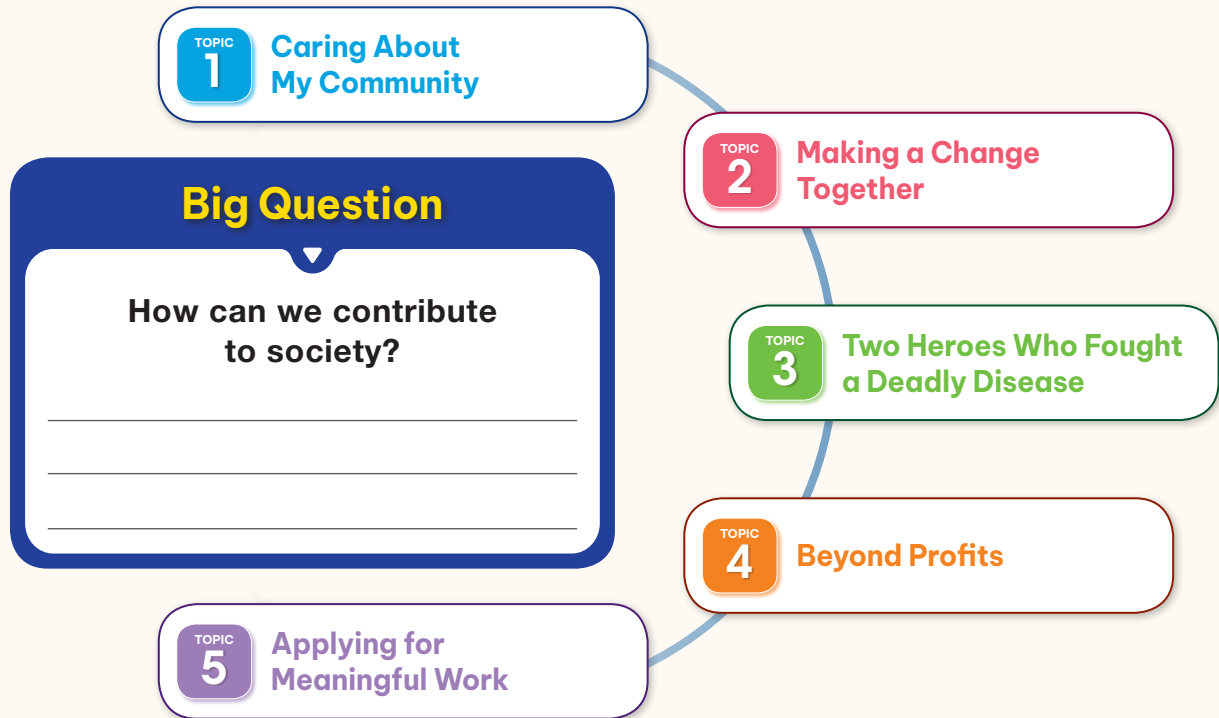


1 What did the writer learn from her volunteer experience?

2 Think about your recent volunteer experience and talk about what you learned from it with your partner.

C Answer the Big Question

In this lesson, you have learned about various topics related to the Big Question. Now think about what you've learned and answer the Big Question.



D Check Your Progress

Look through what you've learned in this lesson and reflect on your learning and attitude below.

My Learning	
나는 이번 단원에서 배운 내용을 충분히 이해했다.	😊 😐 😞
나는 이번 단원에서 배운 표현과 어휘를 활용하여 말하거나 쓸 수 있다.	😊 😐 😞
나는 이번 단원에서 배운 주제에 대해 나의 생각이나 의견을 표현할 수 있다.	😊 😐 😞
Q. 이번 단원에서 배운 내용 중 가장 중요하다고 생각하는 것은 무엇인가? _____	

My Attitude	
나는 학습 중에 새로운 정보를 잘 이해하고 있는지 스스로 점검했다.	😊 😐 😞
나는 수업에 자발적이고 적극적으로 참여했다.	😊 😐 😞
나는 실수를 두려워하지 않고 나의 생각이나 의견을 자신감 있게 표현했다.	😊 😐 😞
Q. 앞으로 계속 발전시켜야 하는 태도는 무엇인가? _____	

Inventors for the Greater Good

There are some special individuals who used their brilliant ideas to help people and make the world a better place. Get ready to learn who they are and how they contributed to society.

1. Margaret E. Knight



Born in 1838, Margaret E. Knight was an inventor who loved making things with her wood-working tools. One day, Margaret witnessed a terrible accident at a factory. A piece of a loom* broke off, flew through the air, and hurt a young worker. To prevent this from happening again, Margaret invented a device that would immediately stop the machine if it failed to function properly. Soon her invention was adopted by factories across the country. Knight also created other inventions that improved people's lives. For example, she invented a machine for producing flat-bottomed paper bags, which enabled people to carry groceries and pack lunches more easily.

*loom 베틀



2. Tim Berners-Lee

Tim Berners-Lee is a British computer scientist. In 1989, he invented an information system called the World Wide Web, which we now use on a daily basis. It revolutionized the way we access the Internet, and it has had a profound social and economic impact. The original idea behind the World Wide Web was to make it easier for scientists from different universities to share information and communicate with one another. However, Berners-Lee decided to distribute his invention to the public for free, even though he could have made a fortune from it. This is because he strongly believed that the technology like the Internet should belong to everyone, not just a few companies.



3. Louis Braille

Louis Braille, a French educator, brought a significant change to the lives of blind people through his invention of the Braille system. This reading and writing system uses different combinations of six dots to represent each letter in a word. It was inspired by a note-taking system of embossed dots used by the army. Braille also excelled in music, and he expanded the Braille system to music and mathematics. The Braille system has been adapted to more than 100 languages and is used all over the world. Braille's invention has empowered blind people to access written information and communicate independently. It continues to benefit the blind community today, leaving a lasting impact.



4. Marie Curie

While Marie Curie is widely recognized for her pioneering work on radioactivity, few may know that she also played a significant role in the medical field during World War I. At that time, X-ray machines were available only in city hospitals, far from the battle sites where injured soldiers were being treated. Curie's innovative solution was to create a vehicle equipped with an X-ray machine and staffed with a specially trained X-ray operator. These mobile units, also known as "Little Curies," were driven directly to the battle sites, allowing doctors to see broken bones and find small pieces of metal in the bodies of wounded soldiers. Marie Curie herself drove one to help save lives!



Explore Further

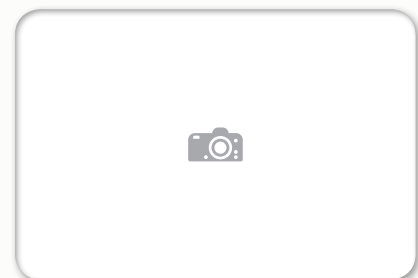
Search for another inventor who contributed to society with an invention. Then share it with your classmates.

Name of the Inventor: _____

His/Her Invention: _____

The Impact of the Invention:

- _____
- _____



The World of Scientific Discovery

Study Points

Functions

- 궁금증 표현하기

I'd be very interested to know.

- 요약하기

In short, inventors have achieved great things after many failures.

Structures

- It was online media that helped spread the word about Galaxy Zoo.
- If it had not been for those participants, Schawinski couldn't have classified that many images.

Big Question

How are scientific achievements made?

TOPIC

1

Listen & Speak

The Value of Failure

TOPIC

2

In Real Life

Seeing the Unseen

TOPIC

3

Read

Science Is for Everyone

TOPIC

4

View & Learn

Science and Humanity

TOPIC

5

Write & Share

An Invitation to
a Sci-Fi World

Science

Technology

The Value of Failure



궁금증 표현하기 I'd be very interested to know.

요약하기 In short, inventors have achieved great things after many failures.

A

Get Ready

- 1 Read the following scientists' quotes below. Think about what it means to fail before making a scientific discovery.

"Failure is success
in progress."

- Albert Einstein

"Whenever you fall,
pick something up."

- Oswald Avery

"It doesn't matter if you try
and try and try again, and fail.
It does matter if you try and
fail, and fail to try again."

- Charles F. Kettering



Small Talk

Think of a time when you failed at something. What did you learn from it?
Share your experience with your partner.

- 2 Listen to the conversation. Check T for true or F for false.

The speakers are going to participate in an invention contest. (T ☐ / F ☐)

B

Listen In

- 1 **1st** Listen to the conversation. How have the girl's feelings changed?

- a pleased → disappointed
- b shocked → annoyed
- c frustrated → motivated

- 2 **2nd** Listen again. What did the girl learn from the 147/805 rule?

- a not to be afraid to ask for help
- b to see things from different angles
- c not to give up after a series of failures

C Speak Together

Step 1 Read about a person who invented something despite failures and difficulties. Search for another example on your own.

Example

The person
Steven Sasson, the inventor of the digital camera



The failures and difficulties

- He dealt with many technical failures while developing the first digital camera.
- People didn't support his research, thinking digital photography would never be popular.

The result
He learned new things about cameras from each failure and finally succeeded in developing the digital camera.

Your Own

The person



The failures and difficulties

- _____
- _____

The result

SEARCH inventors who failed multiple times before reaching success 🔍

Step 2 Talk with your partner about what you wrote in **Step 1**. 👤

Example

A: Have you heard of Steven Sasson, the inventor of the digital camera?

B: No, I haven't. But **I'd be very interested to know** more about him. Can you tell me?

A: Sure. He didn't give up despite facing many challenges. For example, he dealt with many technical failures while developing the first digital camera.

B: That must have been difficult.

A: That's not all. People didn't support his research, thinking digital photography would never be popular. But he learned new things about cameras from each failure and finally succeeded in developing the digital camera.

B: So, **in short**, he didn't give up under any circumstances!

Self-Check

- 1 궁금증을 표현하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.
- 2 요약하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.



Seeing the Unseen



A

Listen to the Lecture

1 **1st** Listen to the lecture. What is the best title for it?

- a The Importance of Observation in Science
- b The History of Scientific Research and Discovery
- c The Skills Needed to Carry Out Complex Experiments

2 **2nd** Listen again. Fill in the blanks to complete the summary of the lecture.

Science Lecture

Lecturer: Elizabeth Parker

Main Topic: ¹⁾ _____

- It has led to many of the greatest scientific achievements.

e.g. Darwin proposed the theory of evolution after observing the beaks of ²⁾ _____ on the Galapagos Islands.

- It must be followed by thorough ³⁾ _____ and repeated testing.

B

Present Your Ideas

Step 1 Read the example and plan your own science project to observe something.

Example

What to observe

the growing process of plants



Purpose of the project

to understand how plants grow and develop

How to do the project

- plant seeds and measure the height of the sprouts
- photograph the sprouts every day to see how their leaves grow and how their colors change

Your Own

What to observe



Purpose of the project

How to do the project

- _____
- _____

Help Box

- observing the shapes of the moon
- monitoring the air quality or noise level of a place

Step 2 Prepare a short speech about what you wrote in **Step 1** and share it with your classmates.

Example

Hi, I'd like to introduce my science project. I'm going to observe the growing process of plants. The purpose of the project is to understand how plants grow and develop. I will plant seeds and measure the height of the sprouts. I will also photograph the sprouts every day to see how their leaves grow and how their colors change. I hope to learn some important scientific information from this project. If you have any questions about my project, please raise your hand!

Speaking Skill

청중의 질문에 답하기
발표를 한 뒤 "If you have any questions, please raise your hand."라는 표현을 통해 청중에게 질문을 유도할 수 있다. 질문자 외 다른 청중을 위해 질문의 내용을 한번 정리하여 말한 뒤 답변하는 것이 좋다.

Self-Check

- 강의를 듣고, 그 내용을 파악할 수 있다.
- 과학 프로젝트를 계획해 보고, 그 내용을 다른 사람 앞에서 발표할 수 있다.

😊 😐 😞

😊 😐 😞

A Topic Preview

Look at the two pictures below. Which one do you think is a better match for the word “scientists?” Share your thoughts with your partner. 👤



B Vocabulary Preview

Look at the pictures and fill in the blanks using the words from the box. Change the form if necessary.



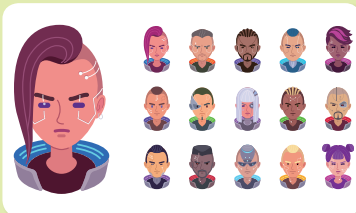
My _____ team's biggest
1) _____ this year was
winning the championship.



The heavy storm had a(n)
2) _____ impact on the
crops.



The government is going to
3) _____ a new
campaign for road safety in
school zones.



This game's most interesting
4) _____ is that users can
customize their characters.



Students were asked to be
actively 5) _____ in
group discussions.



The biologist is studying the
recent 6) _____ of
declining bee populations.

feature tremendous phenomenon accomplishment launch involved



Science Is for Everyone

When we think about science, we might consider it as a domain reserved exclusively for scientists in long, white lab coats who spend their days conducting experiments and analyzing data. They seem to have very little in common with ordinary people like us. However, this perception is far from the truth. In reality, science belongs to everyone, and we all have the ability to play a role in the advancement of science. There have been numerous citizen science projects in which ordinary people have made contributions to remarkable scientific accomplishments. Let's take a look at two of them.



Q1 **Over to You** Do you agree with the statement that science belongs to everyone? Why or why not?

domain
ordinary
numerous

reserve
perception
citizen

exclusively
reality
accomplishment

experiment
belong to

have ~ in common
advancement

Classifying Galaxies

Background Link 🔗

은하(galaxy)

수천억 개의 별들이 모여 있는 집단으로, 우주에는 1천억에서 5천억 개 사이의 은하가 존재한다. 은하는 그 모양에 따라 타원은하, 나선은하 등으로 분류되며, 지구와 태양계가 포함된 우리은하는 막대나선은하에 속한다.

Kevin Schawinski was a young astronomy researcher studying black holes and the evolution of galaxies at the University of Oxford. This might sound exciting, but his job there was dull and time-consuming. He had to classify around one million images of galaxies according to their shape. Since they all looked similar but were actually shaped slightly differently, the best way to do this was to sort them while looking at each one individually. Of course, this would require a tremendous amount of time. It took Schawinski a whole week to classify just 50,000 galaxies. He thought, “But what about the remaining 950,000?”



Q2 What was Kevin Schawinski's job as an astronomy researcher at the University of Oxford?

classify
sort

astronomy
individually

evolution
tremendous

dull
remaining

slightly



One evening after work, Schawinski met a friend named Chris Lintott and complained about the situation. Lintott suggested that he turn to the Internet to ask other people for help. Eventually, the two men ended up launching a crowdsourced online project known as Galaxy Zoo. The website was kept as simple as possible, with a very basic design and an easy-to-use interface. This allowed those who wanted to participate to get started quickly. New visitors were greeted with a brief tutorial that explained the project. Then they were shown an image of a galaxy and asked to click buttons that described its features. Is the galaxy smooth and rounded? Is its shape an oval or a spiral? After completion of the tutorial and a little bit of practice, the participants were able to classify galaxies effectively.

Reading Strategy

Identifying Meaning from Context

글의 맥락을 바탕으로 생소한 용어나 단어의 의미를 추론하며 읽는다.

Q3 What did Chris Lintott suggest to Kevin Schawinski?

Q4 **Apply the Strategy** Guess the meaning of the word “crowdsource” in line 4.

Q5 Why was the website created with a basic design and an easy-to-use interface?

turn to	end up	launch	interface	participate
greet	brief	tutorial	feature	smooth
rounded	oval	spiral	completion	

It was online media that helped spread the word about Galaxy Zoo, bringing more and more participants to the website. Shortly after the website was launched, nearly 70,000 classifications were being made per hour. In a year and a half, more than 80,000 individuals participated, and they made more than 75 million classifications. If it had not been for those participants, Schawinski couldn't have classified that many images. In fact, it would have taken him decades on his own.

More than 15 years have passed since the project first began in 2007. Galaxy Zoo has now grown into Zooniverse, which is one of the most popular platforms on the Internet for ordinary people who want to participate in science projects. It is more active than ever before, with about 2 million registered users worldwide. It now offers a wide range of projects in astronomy, biology, physics, and more. If you want to get involved, you should definitely check it out!



Q6 How did online media help Galaxy Zoo?

Q7 Check T for true or F for false.

Zooniverse is an online platform that allows ordinary people to participate in various kinds of science projects. (T ☐ / F ☐)

spread
physics

decade
involved

platform
definitely

register

biology



Chasing Steve

In Alberta, Canada, there were some “aurora chasers” who formed an informal group online. They would leave their homes at night and try to get exceptional photographs of auroras. Then they would share them with the rest of the group.

- 5 In the summer of 2014, the group members began to notice something strange appearing in the night sky. There were unusual ribbons of green and purple light, some of which seemed to stretch for thousands of kilometers. Sometimes they lasted for just a few minutes, while other times they remained in the sky for a whole hour. They were similar in
- 10 appearance to auroras, yet they possessed some notably different features. Unsure of what they were, the group decided to name the phenomenon “Steve,” based on a scene from an animated movie where some characters give that name to an unfamiliar object.

Background Link 🔗

오로라(aurora)

우주에서 지구로 유입되는 입자들이 고층 대기의 기체들과 충돌하여 빛을 내는 현상이다. 주로 남반구와 북반구의 고위도 지방에서 나타난다.

Background Link 🔗

Steve 이름의 유래

애니메이션 영화 *Over the Hedge*에서 주인공인 동물들은 생전 처음으로 울타리를 보았고, 그것에 대한 두려움을 덜기 위해 “Steve”라는 이름을 지어 주었다. 이 영화 내용처럼, 시민들도 처음 보는 이 현상을 Steve라 부르기로 했다.

Q8 What strange phenomenon did the aurora chasers find in the night sky?

chase
stretch

informal
possess

exceptional
notably

notice
phenomenon

appear



After photographing Steve for several years and discussing what it might be, the group members decided to get help from experts. They showed their photos of Steve to a professor of astronomy at a local university and a scientist at NASA. Surprisingly, neither of them had any idea what Steve was. They confirmed that it was not an aurora, but it did not resemble anything they had seen before. They realized that the group had discovered a new type of phenomenon that had never been properly studied. In order to learn more about it, NASA funded a citizen science project involving the public. The project asked ordinary people to gather photos of Steve and send them to NASA. It is still in progress today.

In honor of the aurora chasers who first discovered the phenomenon, the name “Steve” has been kept. However, it is now written in all capital letters and stands for “Strong Thermal Emission Velocity Enhancement.” Experts have acknowledged that it is the dedicated members of the aurora chasers group that deserve the credit for discovering STEVE. If it had not been for them, it might have remained unnoticed forever. There are many interesting theories about STEVE, but none of them have been proven for certain. Scientists and citizens continue to collaborate to solve this mystery, and they are learning more and more about STEVE every day.

Q9 Why has the name “Steve” been kept?

resemble
thermal
dedicated

properly
emission
deserve

in progress
velocity
credit

in honor of
enhancement
theory

stand for
acknowledge
collaborate

Most of the individuals involved in these two projects are not professional scientists. Instead, they are citizen scientists—ordinary people who desire to help advance science in areas that they are interested in. Even though citizen scientists may not have science
5 degrees or long, white lab coats, they are still capable of making valuable contributions to science. You can become one as well if you have curiosity and an interest in taking part in scientific research. The next great scientific achievement could be made by citizen scientists volunteering their time for the purpose of better understanding the
10 world.

 **Source** www.discovermagazine.com 외 다수 (p. 164 참조)



Connect to the
Big Question

How can individuals make contributions to the advancement of science?

professional

desire

degree

valuable

achievement

A Summarize the Text

Fill in the blanks using the words from the box to summarize the main text.

Galaxy Zoo

Citizens helped an astronomy researcher
1) _____ images of galaxies.

Galaxy Zoo was a(n) 2) _____ online project started by Kevin Schawinski and Chris Lintott.

Its simple website allowed visitors to participate after reading the tutorial and practicing a bit.

It provided pictures of galaxies, and visitors were asked to click buttons that described their 3) _____.

It has evolved into 4) _____, one of the most popular citizen science platforms.

STEVE

Citizens discovered an unusual phenomenon that looked like a(n) 5) _____.

Some aurora chasers first noticed strange lights in the night sky and 6) _____ them.

They showed pictures of this phenomenon to 7) _____, and it turned out that it was something that had never been studied before.

Its name, Steve, which was given by its initial discoverers, is still in use today.

photographed

Zooniverse

features

aurora

classify

crowdsourced

experts

B Check Out the Details

Read the statements and check T for true or F for false based on the main text.

1 Only people with an astronomy degree were allowed to participate in the Galaxy Zoo project.

T

F

☐
☐

2 Zooniverse includes projects in fields other than astronomy.

☐
☐

3 The name "Steve" was derived from an animated movie.

☐
☐

4 All the mysterious theories about STEVE have been proven by NASA.

☐
☐

C Dive Deeper

What are some benefits of citizen science projects? Write down your ideas and share them with your partner. 



Example 1

Citizen science projects help scientists deal with immense amounts of information. These projects can involve many participants who collect and sort data.

Example 2

I think citizen science projects break down the traditional barrier between scientists and ordinary people. They give ordinary people the chance to be part of a scientific discovery.



Your Own

D Broaden Your View

Read the following example and search for another citizen science project. Then share it with your classmates. 

SEARCH citizen science projects 

Example

What is the name of the project?

eBird



What is it about?

eBird is an online database-building project related to protecting the biological diversity of birds. It collects basic data about bird populations and distribution on a global scale.

How can we participate?

Visit the eBird website and submit information about birds you've observed. Enter where and when you observed them, as well as the types and numbers of the birds you saw. You can also add photos.

Your Own

What is the name of the project?

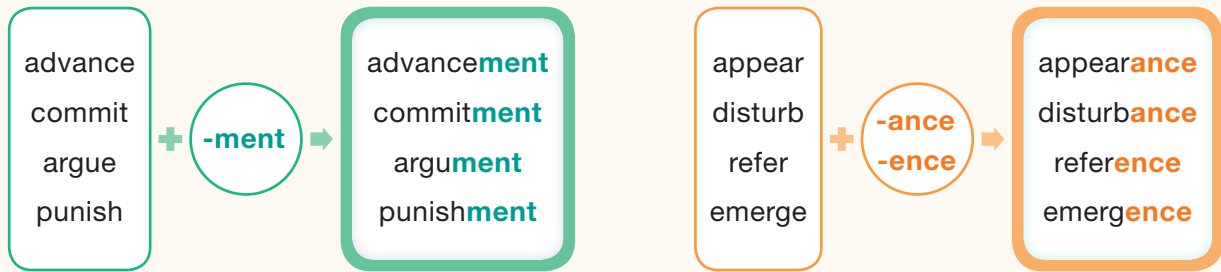


What is it about?

How can we participate?

Focus on Language

A Word Building



Choose the appropriate word to complete each sentence.

- 1 Mr. Huston was highly praised for his to his work.
- 2 The of a new fish species shocked the biologists.
- 3 The researchers visited the local library to borrow some books for .

B Collocation Building



Fill in the blanks using the words from above.

- 1 The restaurant has a new owner, but the quality of its food remains _____.
- 2 The hiring manager will conduct a(n) _____ with each candidate for the position.
- 3 Despite her efforts, her extraordinary musical talent remained _____ by the public.

Your Own

Make your own sentences using the words or phrases above. Then share them with your partner.

- 1 _____
- 2 _____



Grammar Building

POINT
1

Read and Notice Read the advertisement below, paying attention to the structures in bold.

Environmental Conference



"It is by working together that we can create a sustainable future!"

Join us at the annual Environmental Conference! **It is** our generation **that** needs to start making changes for the future. During the conference, you will hear inspiring stories about the tireless efforts of individuals and communities trying to save the planet. Don't miss out on the opportunity to learn, connect, and be empowered. **It is** everybody's active participation **that** will transform the environment for the better!

Practice Rewrite the sentences using the same grammatical structure as above. Emphasize the underlined words.

1 My friend Sue recommended the movie *Elemental* to me.

→ It _____.

2 The man crashed into a taxi on Fifth Street yesterday.

→ It _____.

Find More Find the sentence(s) from the main text with the same structure as above.

POINT
2

Read and Notice Read the speech below, paying attention to the structures in bold.

First, I'd like to express my deepest appreciation to my family, who have shown me endless love and encouragement. **If it had not been for** their support, I **wouldn't have had** the courage to chase my dreams. I also want to thank my friends for being there for me when things got tough. **If it had not been for** their advice, I **would have given** up before I succeeded. I'm honored to accept this award and can't wait to share it with my family and friends! Thank you!



Practice Complete the sentences using the same grammatical structure as above. Use the given words.

1 If it had not been for their seat belts, they would _____. (be seriously injured)

2 If it had not been for the doctors, the patient could _____. (lose his life)

Find More Find the sentence(s) from the main text with the same structure as above.



Science and Humanity



A

Before You View

- 1 **Think** Read the definition of the word “robot” and think about what robots are mainly used for.

robot: a machine that is capable of performing complicated tasks and moving independently

- 2 **Learn about the Topic** Read the text below and check T for true or F for false.

When Dennis Hong was a young boy, his parents took him to the movie *Star Wars*. The robots featured in the film immediately caught his attention, and from that exact moment, he knew what he wanted to do.

Now Hong is one of the most successful robot scientists in the world. Known as the “Leonardo da Vinci of robots,” he dedicates his time and effort to developing next-generation humanoids. Humanoids are robots that look and function like humans. Hong’s research is mostly focused on improving the movement of these robots so that they can perform various delicate and complex tasks in the environments we live in. Hong’s goal is to develop robots that can help people in multiple ways, from saving lives in dangerous situations to performing tasks that are too difficult or dangerous for humans.

T F

- 1) A movie inspired him to pursue a career as a robot scientist.
- 2) He is focusing on improving the artificial intelligence of robots.

☐	☐
☐	☐



B

While You View

- 1 **1st** Watch the video. Choose the statement that the narrator would probably agree with.
- a Scientists should be motivated by ethics rather than profit.
 - b Scientists should not be afraid of making mistakes and failing.
 - c Technology should be developed in a way that benefits society.

- 2 **2nd** Watch the video again. Fill in the blanks using the words from the video.

Hong's Definition of Robots

For him, robots are ¹⁾_____ technological inventions and ²⁾_____ machines that do tasks for humans.

C

After You View

React to the Video How would you define the word “robot” in your own words? Share your definition with your partner. 

A robot is _____.

An Invitation to a Sci-Fi World

Writing a Movie Review

You are going to write a review with your own opinion and evaluation of a movie. Start with a brief summary of the movie's plot and then write what you liked most about the movie. Conclude your review with a rating and a recommendation.

A

Sample Analysis

Review.com

The Martian, released in 2015, is a thrilling science fiction movie directed by Ridley Scott. It is about an astronaut named Mark Watney, who is separated from his crew and left alone on Mars after an accident. With limited resources and no means of communication, Mark finds a way to survive and signal to Earth. The lead actor who starred as Mark was Matt Damon, and his acting was marvelous. He showed the desperate and horrifying situation of his character well, which made the tense scenes of the movie even more dramatic. I was impressed by the realistic depiction of Mars in the movie. Because of the high quality of the special effects, the planet's vast landscape seemed real. Overall, I think the movie is a great mix of drama and science. I would give it four stars out of five. I highly recommend it to anyone who is interested in science, adventure, and space exploration.

Title & Director

(A)

(B)

(C)

Evaluation and Recommendation

273

15

★★★★☆

👍/👎

Fill in the boxes above with the appropriate subtopics.

Plot of the Movie

Special Effects

Acting Performance

B

Write Your Own

Step 1 Generate Ideas

Think about a science fiction movie you would like to write a review about.



Example 1

Gravity (2013)

Example 2

Dune (2021)

Your Own



Step 2 Develop Your Ideas

Complete the following chart to develop your ideas.

Movie Title		Director	
Plot			
Lead Actor & Performance			
Special Effects			
Evaluation and Recommendation	Rating: ☆☆☆☆☆ Recommendation: 👍 / 👎		

Step 3 Write Your Movie Review

Write your own review of a science fiction movie based on what you wrote in **Step 2**.

_____, released in _____, is a(n) _____ science fiction movie directed by _____. It is about _____.

The lead actor who starred as _____.

I was impressed by _____.

Overall, I think the movie is _____. I would give it _____ star(s) out of five. _____.

☆☆☆☆☆ 👍 / 👎

Writing Skill

영화 감상문을 작성할 때는 즐거리를 간략하게 소개하고 자신의 감상을 설명한다. 좋은 점 또는 아쉬운 점을 구체적으로 작성하면 더욱 설득력 있게 감상문을 작성할 수 있다.

- Examine your draft first. Then ask your partner to check your draft using the list below.

	Self	Partner
이 감상문은 공상 과학 영화의 즐거리와 영화에 대한 구체적인 감상을 서술하고 있다.	☆☆☆☆☆	☆☆☆☆☆
이 감상문은 정확한 문법과 적절한 단어를 사용하고 있다.	☆☆☆☆☆	☆☆☆☆☆
Partner's Comment _____		

☒ online writing assistance 또는 online proofreading tool을 이용해서 철자, 구두점, 문법 오류 등을 점검해 보세요.

Step 4 Revise and Present Your Writing

Revise your movie review based on the feedback. Then present it to the class.

A

Listen and Discuss



- 1 Listen to the conversation. Which picture is the most relevant to the activity the speakers will do tomorrow?

a



b



c



- 2 Why is it important for individuals to have an interest in science? Discuss your thoughts with your partner.

Example

Science helps us understand the world around us. Thanks to science, we can investigate how things work and why things happen. For example, we can explain why rainbows are colorful!

B

Read and Search



Read the text below and answer the following questions.

Sometimes great discoveries or inventions can come from observing the things around us. The story behind the invention of Velcro is a great example. In 1941, Swiss engineer George de Mestral returned home from the countryside and found burdock* seeds stuck to his pants. He was curious about how the seeds were able to cling so tightly, so he examined them under a microscope. He saw that the seeds had hundreds of tiny hooks that could grip the loops on another surface, such as fabric or fur. Fascinated by what he observed, he developed a fastening system that imitated the hook and loop mechanism of burdock plants. He created two strips of fabric, one with tiny hooks and the other with loops. De Mestral called his invention "Velcro." It was De Mestral's curiosity and observation skills that enable us to enjoy the benefits of this convenient product today.



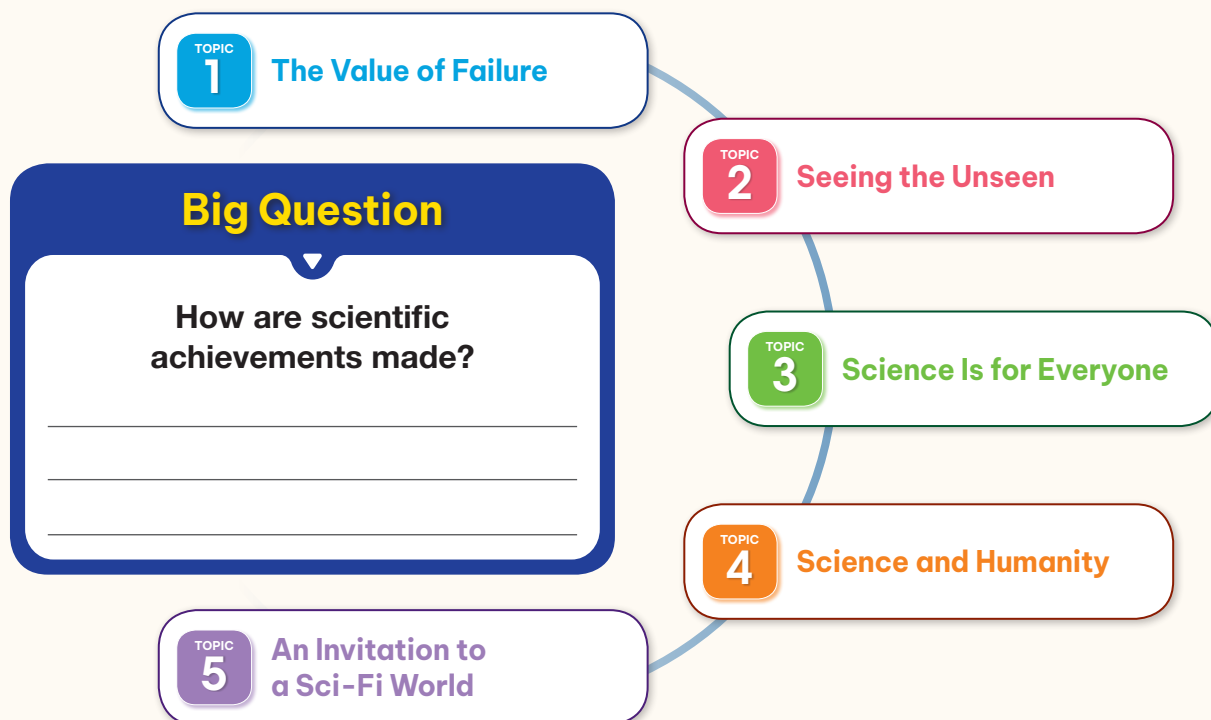
*burdock 우엉

- 1 What did De Mestral notice when he examined burdock seeds under a microscope?
- 2 Search for another example of an invention that was inspired by observing nature.

SEARCH inventions inspired by nature

C Answer the Big Question

In this lesson, you have learned about various topics related to the Big Question. Now think about what you've learned and answer the Big Question.



D Check Your Progress

Look through what you've learned in this lesson and reflect on your learning and attitude below.

My Learning	
나는 이번 단원에서 배운 내용을 충분히 이해했다.	😊 😐 😞
나는 이번 단원에서 배운 표현과 어휘를 활용하여 말하거나 쓸 수 있다.	😊 😐 😞
나는 이번 단원에서 배운 주제에 대해 나의 생각이나 의견을 표현할 수 있다.	😊 😐 😞
Q. 이번 단원에서 배운 내용 중 가장 중요하다고 생각하는 것은 무엇인가? _____	

My Attitude	
나는 학습 중에 새로운 정보를 잘 이해하고 있는지 스스로 점검했다.	😊 😐 😞
나는 수업에 자발적이고 적극적으로 참여했다.	😊 😐 😞
나는 실수를 두려워하지 않고 나의 생각이나 의견을 자신감 있게 표현했다.	😊 😐 😞
Q. 앞으로 계속 발전시켜야 하는 태도는 무엇인가? _____	

- **Your Task** You are going to give a presentation explaining the scientific principles behind everyday objects.

STEP 1

Think about things that you are curious about.

Example

How do automatic doors work?

How does Wi-Fi work?

How do microwaves heat food?

Your Own

STEP 2

Make a group of four. Share the questions you wrote in **Step 1** and choose one to research.

STEP 3

Answer the following questions to plan your group's presentation.

Example

What do you want to find out?

We want to know how automatic doors work.

What is your hypothesis?

We think that special sensors may be used to detect motion.

How will you do your research?

We will start by searching for information on the Internet. Then we'll visit the local library to find books related to automatic doors.

Your Group

What do you want to find out?

What is your hypothesis?

How will you do your research?

STEP 4

Do the research and make a presentation using the information you find.

Example

Scientific Presentation



How Do Automatic Doors Work?

Group 1

Hypothesis

Special sensors may be used to detect motion.

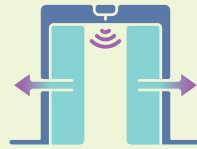
How we did the research

We looked up information online and checked out books from the library.



What we have learned

- Automatic doors have ultraviolet sensors on top of them, which are sensitive to changes in the amount of light.



- When the light is blocked by a person standing in front of the door, the sensor detects the decreased amount of light and opens the door.
- When the amount of light is restored after the person passes by, the sensor closes the door.

STEP 5

Present your information to the class.

Example

Our group did some research to find out how automatic doors work. We expected that special sensors may be used to detect motion. To check our hypothesis, we used the Internet and library books as our primary sources of information. According to what we found, If you have any questions about our presentation, please raise your hand!

Scientific Presentation



How Do Automatic Doors Work?

Group 1

Monitor Your Work

1 모든 조원이 프로젝트에 적극적으로 참여하고 원활히 협업했다.

Y

N

☐
☐

2 우리 조의 프레젠테이션은 일상 속 사물의 과학적 원리를 명확하게 설명한다.

☐
☐

3 이 활동에서 배운 점:

Life Is a Sum of Choices



Study Points

Functions

- 확실성 정도 표현하기

I'm **not quite certain** whether it would be a wise choice to go to the concert.

- 충고하기

If I were you, I would go to the concert and enjoy it.

Structures

- She encouraged them **not** to use the familiar voting method, **but** to try something different instead.
- **Whichever** we choose will have pros and cons.



Big Question

How can we make better choices?

TOPIC

1

Listen & Speak

Seeking Advice



TOPIC

2

In Real Life

Different Situations,
Different Strategies



TOPIC

3

Read

There's More than
One Way to Vote



TOPIC

4

View & Learn

When Past Choices
Haunt You



TOPIC

5

Write & Share

Weighing Your Options

Social Studies

Economics



확실성 정도 표현하기 I'm not quite certain whether it would be a wise choice to go to the concert.
 충고하기 If I were you, I would go to the concert and enjoy it.

A Get Ready

1 Look at the pictures below and think about the decisions you make in your daily life.



selecting a dish at a restaurant



choosing what TV show to watch



deciding what to wear



picking an activity to do with friends

2 Listen to the conversation. What will the boy most likely do after the conversation? 🎧

- a call the server b order a salad c pay for the meal

B Listen In 🎧

1 (1st) Listen to the conversation. What are the speakers mainly talking about?

- a the results of the girl's exam
 b their favorite artist's new album
 c the boy's plans for the next day

2 (2nd) Listen again. What is the best response to the girl's last comment?

- a I guess you are right. I do deserve a short break!
 b By the way, can you tell me how to cancel the ticket?
 c Thanks for the advice. Good luck on your exam, too!

C Speak Together

Step 1 Read the following example and think about a situation where you need to make a decision between two options. Then ask your partner to give you some advice.

Example	Your Own
Situation I need to prepare for the final exam. Should I study by myself or join a study group? 	Situation _____ _____ _____ _____
Partner's Advice Join a study group.	Partner's Advice _____
Reason If you join a study group, you can get help with your studies and be motivated by sharing a mutual goal with other members.	Reason _____ _____ _____ _____

Step 2 Talk with your partner about what you wrote in **Step 1**. 

Example

A: Can you give me some advice? **I'm not quite certain** what I should do.

B: Of course! What's the matter?

A: I need to prepare for the final exam. Should I study by myself or join a study group?

B: **If I were you, I would** join a study group.

A: Why do you think that's better?

B: Well, if you join a study group, you can get help with your studies and be motivated by sharing a mutual goal with other members.

A: That's true. Thanks for your advice!

Self-Check

- 1 확실성의 정도를 표현하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.
- 2 충고하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.



Different Situations, Different Strategies



A Listen to the Interview

1 **1st** Listen to the interview. For whom would it be helpful?

- a people who want to change their career
- b people who struggle with making decisions
- c people who want to avoid irrational consumption

Listening Skill

생소한 개념 파악하기

강의나 인터뷰 등에서 생소한 용어나 단어가 언급될 경우, 화자는 보통 바로 이어서 그 개념을 설명한다. 따라서 생소한 용어나 단어가 들리면 이어지는 설명에 집중하여 듣는다.

2 **2nd** Listen again. Fill in the blanks to complete the summary of the interview.

Two types of decision-makers:

- 1 Maximizers: those who spend a lot of energy ¹⁾ _____ all options
- 2 Satisficers: those who choose the first thing that seems ²⁾ _____

Advice for being a good decision-maker:

- ³⁾ _____ between these two types.
- Be a satisficer for ⁴⁾ _____ decisions.
- Be a maximizer for important decisions.

B

Present Your Ideas



Step 1 Read the following example and think about decision-making situations in which you should be a maximizer or a satisficer.

Example

A time to be a maximizer

when I decide whether to go to college or get a job after high school

Why?

It is a significant choice that will affect the rest of my life.

A time to be a satisficer

when I pick which backpack to buy

Why?

It is just a backpack, and as long as it can carry my stuff, it's good enough.

Your Own

A time to be a maximizer

Why?

A time to be a satisficer

Why?

Step 2 Prepare a short speech about what you wrote in **Step 1** and share it with your classmates.

Example

I'd like to give some examples of decision-making situations in which I should be either a maximizer or a satisficer. I should be a maximizer when I decide whether to go to college or get a job after high school. I should compare the pros and cons of each option so that I don't regret my decision, because it is a significant choice that will affect the rest of my life. However, when I pick which backpack to buy, I can be a satisficer and make a quick decision. It is just a backpack, and as long as it can carry my stuff, it's good enough.



Self-Check

- 1 인터뷰를 듣고, 그 내용을 파악할 수 있다.
- 2 다양한 상황에 따른 선택 방법에 대해 다른 사람 앞에서 발표할 수 있다.



A Topic Preview

Read the following paragraph and think about what the main text might be about.

- Suppose you and your friends are trying to decide whether you should watch movies, go shopping, or play board games this weekend. Instead of each of you simply selecting your favorite option, a voting method called “preferential voting” can be used. With this method, you can rank the given options in order of your preference, like “games-movies-shopping” or “movies-games-shopping.” By doing so, you and your friends can base your decision upon a more accurate reflection of each person’s priorities.



B Vocabulary Preview

Look at the pictures and read the sentences. Guess the meaning of each word in bold using context clues.



The government encouraged citizens to participate in the presidential **election**.



The bill passed by a **majority**, with over 70% of the people voting in favor of it.



To reduce costs, the company plans to **eliminate** unnecessary expenses from their budget.



The brothers agreed to **redistribute** the snacks so that both could have an equal share.



Despite being a new employee, her knowledge of the industry is **superior** to her colleagues.

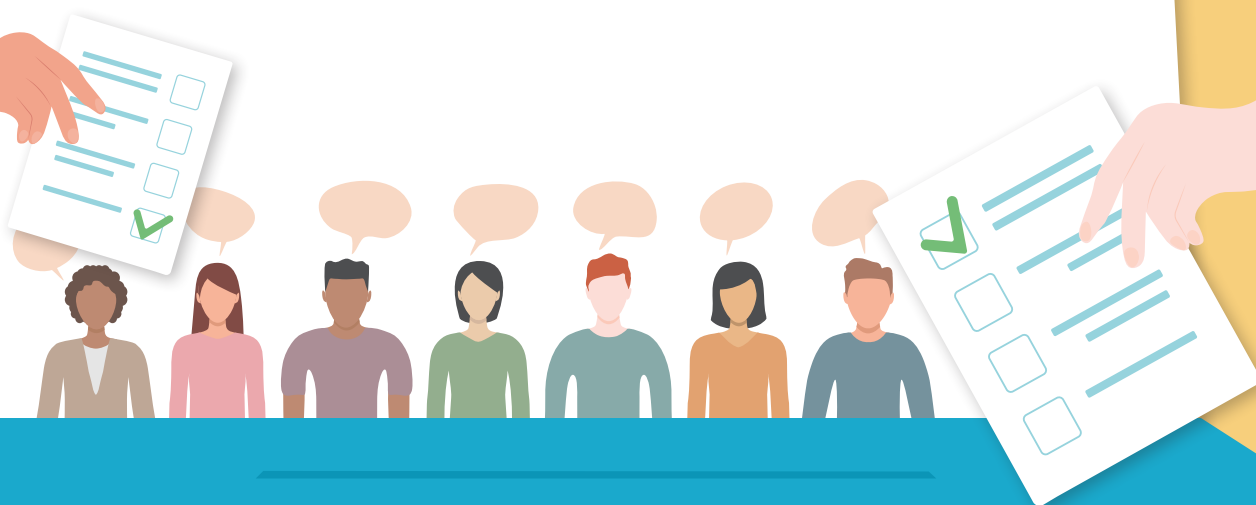


The media must check facts and provide **accurate** information to the public.



There's More than One Way to Vote

We make many personal choices in our lives, from who to have lunch with to what career to pursue. However, there are many situations where we must make decisions as a group. Group decision-making is not as simple as our personal choices, as it involves numerous voices with differing opinions. Voting is often used to make group decisions fairer and more efficient, and various voting methods have been developed over time. The following story illustrates how these different voting methods work.



Q1 Why is group decision-making more complex than personal choices?

Q2 **Over to You** Have you ever been involved in a group decision-making process? If so, what challenges did you face?

vote
method

pursue
illustrate

differ

fair

efficient

Reading Strategy

Summarizing

중요한 정보와 중요하지 않은 정보를 구분하고, 각 단락의 핵심 내용을 요약하면서 글을 읽는다.

The members of the Greenville High School student council needed to decide how to raise money for children in need. Their three options were an art show, a bake sale, and a charity concert, but there were conflicting opinions. So they decided to put it to a vote.

When they asked for advice from Ms. Akers, the council's advisor, she encouraged them not to use the familiar voting method, but to try something different instead. After doing some research, the council members decided to try three different voting systems: the first-past-the-post (FPTP) method, the alternative vote (AV) method, and the Condorcet method. The entire council was curious to find out if the different methods would yield different results.



Q3 What were the three voting systems that the council members decided to try?

student council
alternative

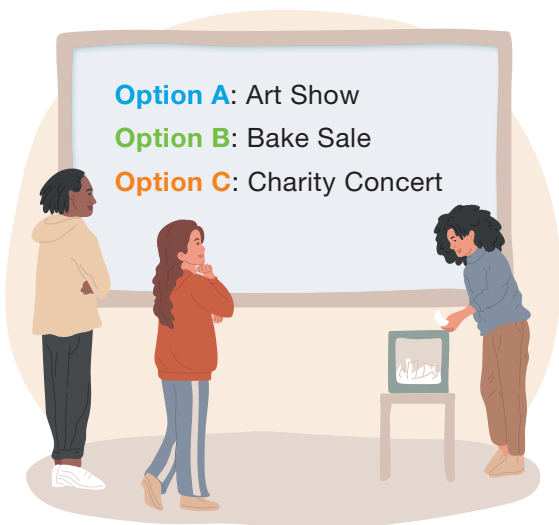
charity
entire

conflict
yield

advisor

encourage

5



On the day of the vote, each possible event was given a letter: “art show” was represented by the letter A, the letter B indicated “bake sale,” and C stood for “charity concert.”

Each of the 20 council members was given a voting

10 slip and instructed to write down the options in order of preference. For example, if the charity concert was their first choice, followed by the bake sale and the art show, they would write CBA.

After every member had voted, the voting slips were counted. The

15 results were as follows:

Order of Preference (1 st – 2 nd – 3 rd)	Number of Votes (total 20)
A B C	4
A C B	1
B A C	6
B C A	1
C A B	6
C B A	2



Q4 If a person prefers the bake sale, followed by the art show and then the charity concert, what would he/she write on the voting slip?

represent

indicate

slip

instruct

preference



The First-Past-The-Post Method

Background Link

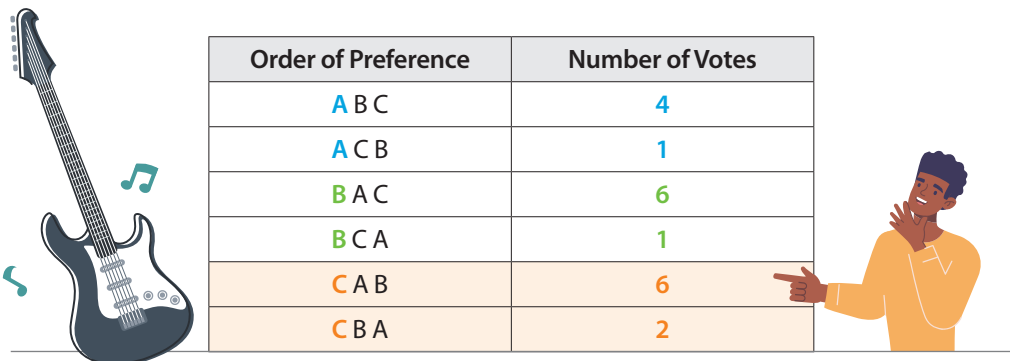
우리나라의 투표 제도

대한민국의 대통령 선거는 전국 단위의 단순 다수제로 치러진다. 모든 유권자는 한 명의 후보에게만 투표할 수 있고, 그 결과 다른 후보보다 한 표라도 더 많이 얻은 후보가 당선된다는 점에서 FPTP 방식으로 볼 수 있다.

The FPTP method is the simplest of the three methods. Voters are given several options, and whichever gets the most first-preference votes wins. Neither the second nor third preference matters at all, so they are ignored. This method is commonly used in political elections around the world.

5

The student council quickly determined that the winner would be option C, the charity concert. This was because it received 8 first-preference votes, while option A received 5 and option B received 7.



Order of Preference	Number of Votes
A B C	4
A C B	1
B A C	6
B C A	1
C A B	6
C B A	2

The FPTP method is uncomplicated and easy to understand, but it has a significant weakness. It is possible to win a vote without the support of the majority. That was the case here. According to the results of the FPTP method, the council's choice was to hold a charity concert. However, only 8 out of 20 council members chose the charity concert as their first preference, which equaled 40% of the total votes.

Q5 Check T for true or F for false.

With the FPTP method, the charity concert was the winner because it was selected by a majority of voters. (T ☐ / F ☐)

Q6 **Apply the Strategy** Summarize the pros and cons of the FPTP method.

matter	ignore	commonly	political	election
determine	uncomplicated	significant	weakness	majority



The Alternative Vote Method

Next, the council members examined the votes using the AV method, and they soon realized that there would be a different result. The AV method can potentially include more than one round of counting. For an option to win in the first round, it needs to get more than 50% of the first-preference votes. As the charity concert only received 40% of the total votes, a second round of counting was required.

Option A, the art show, received the fewest first-preference votes, with only 5 council members voting for it. Therefore, option A was eliminated, and the 5 council members' votes were redistributed based on their second preferences. As a result, 4 votes for option B (ABC) and 1 for option C (ACB) were added to the total. This meant that option B had 11 total votes, while option C had only 9. As a result, the bake sale would be the winner.

Order of Preference	Number of Votes
A BC	4
A CB	1
BAC	6
BCA	1
CAB	6
CBA	2

Unfortunately, the AV method is not perfect either. It sometimes allows second-preference votes to have a greater influence than first-preference votes. In this case, the bake sale won, but this was mainly due to the second-preference votes it received.

Q7 What is required for an option in the AV method to win an election in the first round?

examine

potentially

total

eliminate

redistribute



The Condorcet Method

Background Link

The Condorcet Method

프랑스의 수학자이자 정치가, 철학자인 니콜라 드 콩도르세 (1743~1794)가 고안한 방식으로, 그의 이름을 따서 명명되었다. 여러 명의 후보를 각각 두 명씩 짝 지어 비교했을 때, 다른 모든 후보를 이기는 승자를 '콩도르세 승자(Condorcet winner)'라고 한다.

Finally, the student council counted the votes using the Condorcet method. This method involves comparing the voters' preferences between each possible pair of options. In this case, there were three pairs to consider: A vs. B, B vs. C, and A vs. C.

Through this method, the student council discovered that its members preferred option A to option B by a count of 11 to 9. In other words, 11 people preferred A to B, voting either ABC, ACB, or CAB. Meanwhile, 9 people preferred B to A by voting BAC, BCA, or CBA. Interestingly, the voters preferred option B to option C by the same count of 11 to 9. They also preferred option A to option C by 11 to 9. As option A, the art show, was preferred to both of the other options, it would be considered the winner.

A vs. B		B vs. C		A vs. C	
Preference	Votes	Preference	Votes	Preference	Votes
A B C	4	A B C	4	A B C	4
A C B	1	A C B	1	A C B	1
B A C	6	B A C	6	B A C	6
B C A	1	B C A	1	B C A	1
C A B	6	C A B	6	C A B	6
C B A	2	C B A	2	C B A	2
A : B = 11 : 9		B : C = 11 : 9		A : C = 11 : 9	

The Condorcet method's weakness is that, along with being complex, it sometimes fails to select a winner. This is especially true in elections that contain numerous options. It is possible that no option will be clearly preferred over the others.

Q8 Apply the Strategy Summarize the weaknesses that the Condorcet method has.

compare

meanwhile

complex

select

contain

Instead of all methods pointing toward a single option and making the council's choice easier, the winner differed with each method. After a long, intense discussion with Ms. Akers, the student council members decided to choose the Condorcet method, as they liked the idea of directly comparing each option with the others. Everyone agreed that they learned a lot about different voting systems through this experience.

It is obvious that choosing an ideal voting method is a complex and challenging task. No voting system is flawless or clearly superior to another. Whichever we choose will have pros and cons. Some people believe that it is best to keep the process simple by not ranking our choices at all. Others continue to develop and test new ways of voting, arguing that more complex methods deliver more accurate results. All of these efforts are designed not to make decision-making difficult and inefficient, but to help us make better decisions as a society. Ultimately,

understanding all of the possible voting methods and weighing their pros and cons allows us to better understand the process of decision-making. When we understand decision-making better, we are more likely to become better decision-makers ourselves.



Source www.plus.maths.org 외 다수 (p. 164 참조)

Connect to the Big Question

Why is it important to understand the process of decision-making?

intense
flawless
ultimately

directly
superior
weigh

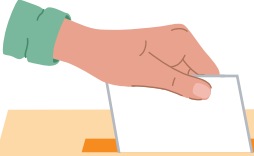
obvious
rank

ideal
argue

challenging
accurate

A Summarize the Text

Fill in the blanks using the words from the box to summarize the main text.



The FPTP Method

• How it works
This simple method considers only the ¹⁾ _____ preference of each voter.

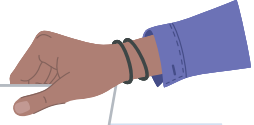
• Its weakness
There is a possibility that one option might win a vote without receiving the support of the ²⁾ _____.



The Alternative Vote Method

• How it works
If no option wins the majority, there is a ³⁾ _____ round of counting. The option with the ⁴⁾ _____ first-preference votes is removed. And the votes for that option are ⁵⁾ _____ based on the voters' second preferences.

• Its weakness
It can give second-preference votes a ⁶⁾ _____ influence than first-preference votes.



The Condorcet Method

• How it works
This method determines the winner by ⁷⁾ _____ each possible pair of options. The winner is the option that is preferred over all the others.

• Its weakness
It can fail to select a winner, especially when there are ⁸⁾ _____ options.

fewest	numerous	first	second
comparing	majority	greater	redistributed

B Check Out the Details

Read the statements and check T for true or F for false based on the main text.

- | | T | F |
|---|--------------------------|--------------------------|
| 1 Ms. Akers suggested that council members use a familiar voting method. | ☐ | ☐ |
| 2 On voting day, council members were instructed to write down only their first preference. | ☐ | ☐ |
| 3 Each of the three methods produced a different winner. | ☐ | ☐ |
| 4 The student council decided to choose the FPTP method because of its simple process. | ☐ | ☐ |

C Dive Deeper

If you were a member of the student council in the main text, which voting method would you choose and why? Share your thoughts with your partner. 

Example 1

I would choose the FPTP method. It is uncomplicated and easy, and it would enable us to reach a conclusion quickly because it requires only one round of counting.

Example 2

I would choose the AV method. I like the idea that an option must get over 50% of the total votes to win. I think this method can precisely reflect the preference of the majority.

Your Own

D Broaden Your View

Read the example and search for another method that can help make group decisions. Then share it with your classmates. 

SEARCH 

Example

Six Thinking Hats



FACTS



FEELINGS



CREATIVITY



POSITIVITY



JUDGMENT



ANALYSIS

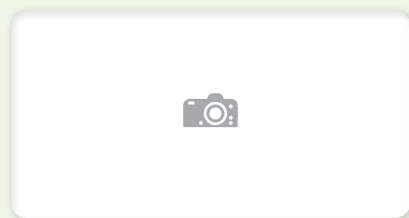
What is it?

The “six thinking hats” is a tool for group discussion that enables group members to view an issue from various angles. The six hats of different colors symbolize six different perspectives: facts, feelings, creativity, positivity, judgment, and analysis.

How does it work?

During the discussion, when someone says, “Let’s put on our green hats,” members of the group should focus on generating new ideas and coming up with fresh approaches to an issue, as the green hat represents creativity.

Your Own

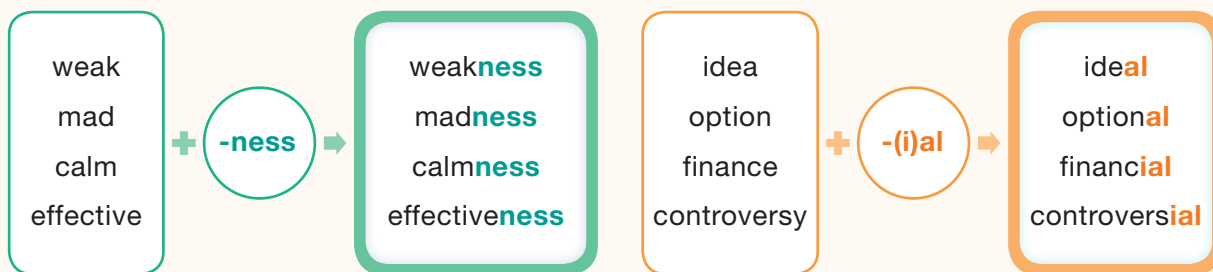


What is it?

How does it work?

Focus on Language

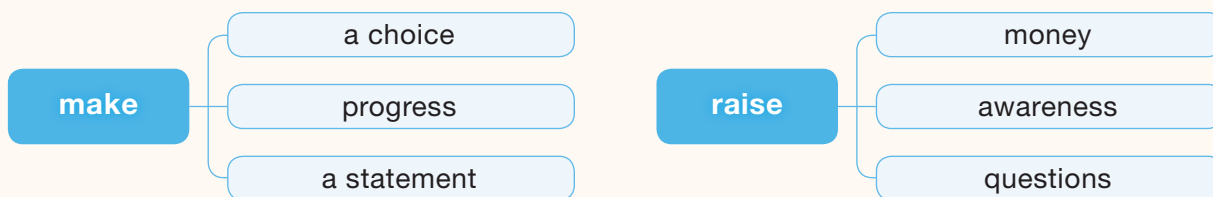
A Word Building



Choose the appropriate word to complete each sentence.

- 1 Attendance at the event is optional / controversial. If you are busy, you don't have to attend.
- 2 The improved health of the patients proved the calmness / effectiveness of the new treatment.
- 3 The enterprise was expected to go bankrupt because it was facing a(n) ideal / financial crisis.

B Collocation Building



Fill in the blanks using the words from above.

- 1 The campaign was organized to raise _____ of the hazards of climate change.
- 2 Through their combined effort, the scientists were slowly but surely making _____ in their research.
- 3 The reporter asked the president to make a _____ about the new policy, but she refused to do so.

Your Own

Make your own sentences using the words or phrases above. Then share them with your partner.

- 1 _____
- 2 _____



Grammar Building

POINT
1

Read and Notice Read the quotes below, paying attention to the structures in bold.

- It is **not** how much we give, **but** how much love we put into giving. —Mother Teresa
- You are built **not** to shrink down to less, **but** to blossom into more. —Oprah Winfrey
- It's **not** what happens to you, **but** how you react to it that matters. —Epictetus
- Our greatest glory is **not** in never falling, **but** in rising every time we fall. —Confucius

Practice Correct the underlined parts using the same grammatical structure as above.

- 1 The coach told us not to think about the medal, but keeping focusing on the game.
- 2 The most important thing is not winning, but participate and enjoy the experience.
- 3 My teacher told me not to memorize the principles of mathematics, but understands them.

Find More Find the sentence(s) from the main text with the same structure as above.

POINT
2

Read and Notice Read the invitation below, paying attention to the structures in bold.

Cultural Event: Happy Potluck Party

We invite you to our Happy Potluck Party, an event where each guest brings a dish for all to share.

- **Date and Time:** November 27, 5:00 p.m.
- **Place:** Classroom 109, Pyeonghwa High School
- **Details:**

- **Whoever** is willing to prepare and share some food can join this unique cultural event.
- You can bring **whatever** you would like to share with other participants.
- The dress code for the party is blue or orange. Choose **whichever** you'd like to wear!

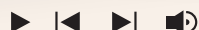


Practice Rewrite the sentences using the same grammatical structure as above.

- 1 Anyone who wants to cut down on sugar will love this menu.
→ _____ on sugar will love this menu.
- 2 This app will translate anything that you type into a different language.
→ This app will translate _____ into a different language.

Find More Find the sentence(s) from the main text with the same structure as above.

When Past Choices Haunt You



A

Before You View

- 1 **Predict** Look at the phrases from the video you are going to watch. What do you think the video is going to be about?

reluctant to admit
that it was a failure

the human instinct
to avoid losses

costs that you'll
never get back

- 2 **Learn about the Topic** Read the text below and fill in the blanks using the words from the text.

In economics and finance, “sunk costs” refer to resources, including money and time, that have already been invested and cannot be recovered. They can make people feel disinclined to change their decisions, causing them to continue to invest in something even when it is clearly not a good investment. Here is a simple example. Imagine you bought a movie ticket, and in the middle of the movie, you realize that it is boring and not worth your time. However, since you’ve already paid for the ticket, you might feel compelled to finish it so that you don’t waste the money you’ve already spent. In this situation, however, the cost of the ticket is already a sunk cost, and it cannot be recovered no matter what decision you make. You can either stop watching the movie and go out to do something else, or you can continue wasting your time sitting in the theater.

→ “Sunk costs” are resources that have already been invested and cannot be ¹⁾ _____.
They make it difficult for us to ²⁾ _____ our past decisions.



B

While You View

1 **1st** Watch the video. What is the best title for it?

- a How Past Investments Affect Our Judgment
- b Different Ways to Recover Investment Losses
- c How to Analyze and Learn from Past Mistakes

2 **2nd** Watch the video again. Which is NOT a case of the sunk cost fallacy?

- a completing a failing project to avoid wasting prior effort
- b paying a cancellation fee for a rarely used subscription service
- c finishing a boring book to justify the money you spent on it

C

After You View

React to the Video Have you ever been in a situation where you fell for the sunk cost fallacy? What did you learn from that situation? Share your experience with your partner. 

Weighing Your Options

Writing a Comparative Paragraph

You are going to write a comparative paragraph. In this paragraph, you will weigh two different options by analyzing their advantages and disadvantages.

A Sample Analysis

Text Editor

New Document

Imagine that you have to choose between going on a trip to a luxurious resort and going camping. The resort offers a comfortable and relaxing atmosphere, and it has a wide range of facilities, such as restaurants, a swimming pool, and a gym. However, experiencing the authentic culture of the local area can be challenging when staying there. On the other hand, camping sites offer a peaceful environment with impressive landscapes and opportunities for activities like hiking or boating. However, the availability of certain facilities, such as showers, is often limited at camping sites, which can be rather inconvenient. Ultimately, since each option has such different pros and cons, the choice between a resort and a camping vacation depends on your individual preferences.

Introduction

(A)

(B)

(C)

(D)

Conclusion

Fill in the boxes above with the appropriate subtopics.

Advantages of
Option 2

Disadvantages of
Option 1

Advantages of
Option 1

Disadvantages of
Option 2

B Write Your Own

Step 1 Generate Ideas

Think about a situation in which you need to choose between two different options.

Example 1	Example 2	Your Own
Where should I buy clothes?	Where should I watch a movie?	
from online stores	at the theater	
from offline stores	at home	

Step 2 Develop Your Ideas

Complete the following chart to develop your ideas.

Situation	
Option 1	Option 2
Advantages of Option 1	Advantages of Option 2
Disadvantages of Option 1	Disadvantages of Option 2

Step 3 Write Your Comparative Paragraph

Write your own comparative paragraph based on what you wrote in **Step 2**.

Imagine that you have to choose between _____.

However, _____. On the other hand, _____.

However, _____. Ultimately, since each option has such different pros and cons, the choice between _____ depends on your individual preferences.

Writing Skill

however, on the other hand, in contrast 등의 비교와 대조를 나타내는 연결어를 사용하여 서로 다른 두 가지를 비교할 수 있다.

- Examine your draft first. Then ask your partner to check your draft using the list below.

Checklist		Self	Partner
		☆☆☆☆	☆☆☆☆
	이 글은 두 가지 선택지의 장단점을 명확하게 비교하여 제시하고 있다.	☆☆☆☆	☆☆☆☆
	이 글은 정확한 문법과 적절한 단어를 사용하고 있다.	☆☆☆☆	☆☆☆☆
Partner's Comment			

☒ online writing assistance 또는 online proofreading tool을 이용해서 철자, 구두점, 문법 오류 등을 점검해 보세요.

Step 4 Revise and Present Your Writing

Revise your comparative paragraph based on the feedback. Then present it to the class.

A

Listen and Write



1 Listen to the conversation. What does the woman advise the man to do?

- a to write down the most important factors to consider
- b to avoid spending excessive time on unimportant matters
- c to ask for advice from people who have had similar experiences

2 Think about a situation in which you need to make a decision. Write down what you should consider when making your decision.

Example 1

Which club should I join?

- ✓ What are my interests?
- ✓ When does the club meet?
- ✓ _____

Example 2

Where should I go on holiday?

- ✓ What do I want to do?
- ✓ What is my budget?
- ✓ _____

Your Own

- _____
- _____
- ✓ _____
- ✓ _____
- ✓ _____

B

Read and Search

Read the text below and answer the following questions.

Imagine you are at a restaurant with a menu that has hundreds of items on it. You feel excited at first, but it quickly becomes overwhelming. You do not know what to choose. Your choice would be much easier if you could pick between beef steak and mushroom spaghetti. This simple example illustrates “the paradox of choice.” Having too many choices actually makes it harder to make a decision. When we have numerous options, we feel like we have to compare them all, and we can never be sure which would be the best choice. Plus, whichever we choose may leave us unsatisfied because we have missed out on so many other options. The paradox of choice can affect our decisions in all areas of our lives, from choosing the color of our socks to deciding on a major.

1 Which statement best explains the paradox mentioned in the text?

- a The quality of our decisions sometimes decreases when we are advised by others.
- b It is harder to make a choice when we have a large number of options to choose from.
- c We often make wiser choices based on our instinct than on careful deliberation.

2 Search for tips that help us deal with the paradox mentioned in the text.

SEARCH how to manage the paradox of choice 

C Answer the Big Question

In this lesson, you have learned about various topics related to the Big Question. Now think about what you've learned and answer the Big Question.



D Check Your Progress

Look through what you've learned in this lesson and reflect on your learning and attitude below.

My Learning	
나는 이번 단원에서 배운 내용을 충분히 이해했다.	😊 😐 😞
나는 이번 단원에서 배운 표현과 어휘를 활용하여 말하거나 쓸 수 있다.	😊 😐 😞
나는 이번 단원에서 배운 주제에 대해 나의 생각이나 의견을 표현할 수 있다.	😊 😐 😞
Q. 이번 단원에서 배운 내용 중 가장 중요하다고 생각하는 것은 무엇인가? _____	

My Attitude	
나는 학습 중에 새로운 정보를 잘 이해하고 있는지 스스로 점검했다.	😊 😐 😞
나는 수업에 자발적이고 적극적으로 참여했다.	😊 😐 😞
나는 실수를 두려워하지 않고 나의 생각이나 의견을 자신감 있게 표현했다.	😊 😐 😞
Q. 앞으로 계속 발전시켜야 하는 태도는 무엇인가? _____	



Unusual Ways of Voting Around the World

Countries often search for ways to make voting easier for their citizens. Here are some unique and interesting ways of voting from around the world.

1

Voting from space – United States

American astronauts are given the opportunity to vote even when they are in space. This is possible due to a bill passed by the Texas Legislature in 1997. It ensures that astronauts in space still have the right to vote. That year, NASA astronaut David Wolf became the first person to cast a vote from space. To cast their votes, astronauts are sent secure electronic ballots* through NASA's Space Network. Astronauts fill out their ballots and email them back to Earth, where their information is transferred to physical paper ballots. Today, with many space missions on the International Space Station (ISS) extending to six months, the number of votes cast from space has been increasing. For instance, Astronaut Kate Rubins has actually voted twice from the ISS, in 2016 and 2020.



▲ Kate Rubins



*ballot 투표용지

2

Compulsory voting – Australia

Australian citizens aged 18 and over have been required to vote in elections under federal electoral law since 1924. As a result, the average voter participation rate for most elections in Australia over the past few decades has been around 90%. If someone misses the vote, they must pay

a fine ranging from 20 to 79 Australian dollars. However, the fine isn't the only thing that encourages Australians to vote. Major elections in Australia are held on Saturdays, which increases the participation rate. Furthermore, voters can buy sausages wrapped in bread, which are called democracy sausages, at voting locations. This makes voting in Australia an enjoyable community event in which everyone wants to participate.



3

Internet voting – Estonia

Estonia has been a pioneer in online voting, allowing citizens to vote from almost anywhere with an Internet connection. In 2005, Estonia became the first country to hold a national election via the Internet. Since then, online voting, also known as i-voting, has become increasingly popular in the nation. In the 2023 national election, more than half of all voters cast their votes online. Estonia has developed its technological and legal basis for online voting over decades. Citizens log in with electronic identification issued by the government and cast their votes without revealing their names. The entire process takes less than two minutes on average. This experimental voting system is being implemented and reshaping democracy around the world.



4

Voting with paper and pencil – Japan

To vote for a candidate in Japan, voters write the name of the candidate with a pencil on an empty voting slip instead of checking a box next to the candidate's name. This method of voting is a tradition in Japan. Some candidates say that they are happy to have their name written by their supporters. However, voters often misspell candidates' names, leading to invalid votes. What if two candidates with identical names run in the same election? That's what happened in 2017. Luckily, the two were of different ages, so election officers asked citizens to write their chosen candidate's age alongside their name.



Explore Further

Search for another unique and interesting way of voting. Then share it with your classmates. 

The Method of Voting:

Country or Region:

How the Method Works:

- _____
- _____



Create a Greener Tomorrow

Study Points

Functions

- 설명 요청하기

What do you mean by that?

- 권유하기

Why don't you check out other products with this logo?

Structures

- Its manufacturer may **require that** it be brought to an official service center to be fixed.
- This movement is gaining a growing influence in Europe as well, **with** more and more countries **joining** the cause.



Big Question

**How can we build
a sustainable future?**

TOPIC

1

Listen & Speak

**Being a Conscious
Consumer**



TOPIC

2

In Real Life

Sustainable Living



TOPIC

3

Read

**Breaking the Cycle:
Solutions to E-waste**



TOPIC

4

View & Learn

**Transformations in
Agriculture**



TOPIC

5

Write & Share

**Analyzing
Environmental Issues**

Environment

Technology

Being a Conscious Consumer



설명 요청하기 What do you mean by that?

권유하기 Why don't you check out other products with this logo?

A

Get Ready

1 Look at the posters below and think about what we can do to protect the environment.



What do you do for the environment in your daily life? Talk about it with your partner.

2 Listen to the conversation. What does the girl advise the boy to do?

- a to avoid purchasing unnecessary items
- b to check if the waste material is recyclable
- c to compare prices before making a decision

B

Listen In

1 **1st** Listen to the conversation. Where is it most likely taking place?

- a at a hair salon
- b at a laboratory
- c at a supermarket

Listening Skill

대화의 배경 및 장소 파악하기

대화의 초반에 드러나는 상황을 파악하는 것이 중요하다. 또 특정 장소에서 사용되는 표현에 유의하여 듣는다.

2 **2nd** Listen again. Which logo are the speakers talking about?

a



b



c



C Speak Together

Step 1 Read the following examples and think about what we can do to be more eco-friendly when shopping.

Example 1



What we can do

try to purchase gently used second-hand items instead of brand-new ones

Expected results

extend the life spans of the items and lower the demand for new products

Example 2



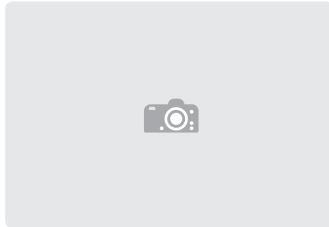
What we can do

choose products with less plastic wrapping

Expected results

save resources used to make plastic wrapping and reduce the amount of waste that is produced

Your Own



What we can do

Expected results

Step 2 Talk with your partner about what you wrote in **Step 1**. 

Example

A: What can we do to be more eco-friendly when shopping?

B: I think we can start by becoming environmentally conscious consumers.

A: **What do you mean by** “environmentally conscious consumers”?

B: I mean we should shop in ways that make less of an impact on the environment.

A: Oh, I see. Do you have any ideas about how I can reduce my impact on the environment?

B: **Why don't you** try to purchase gently used second-hand items instead of brand-new ones? By doing so, you can extend the life spans of the items and lower the demand for new products.

A: That's a good idea! I'll try that next time.

Self-Check

- 1 설명을 요청하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.
- 2 권유하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.



Sustainable Living



A

Listen to the Presentation

1 **1st** Listen to the presentation. What is the speaker mainly talking about?

- a innovative ways to deal with trash
- b the benefits of using renewable energy
- c the sustainability efforts of a green city

2 **2nd** Listen again. Fill in the blanks to complete the presentation slide.

In Copenhagen ...



Around **62%** of people use ¹⁾ _____ to get around the city.

CopenHill turns **440,000** tons of ²⁾ _____ into enough energy for **150,000** homes.



Green roofs improve the city's air quality and reduce its ³⁾ _____.

B

Present Your Ideas

Step 1 Read the following example and search for another sustainable city and its environmental efforts.

SEARCH sustainable cities, eco-friendly cities

Example

Name of the city: Singapore

Its efforts to achieve sustainability:

- It plans to replace all existing fossil fuel buses with buses that use clean energy by 2040.
- It is planning to install more solar panels in order to supply power to around 350,000 houses by 2030.



Your Own

Name of the city: _____

Its efforts to achieve sustainability:

- _____
- _____



Step 2 Prepare a short speech about what you wrote in **Step 1** and share it with your classmates.

Example

Hello, my name is Eunwoo. I'd like to explain to you why Singapore is one of the most sustainable cities in the world. Singapore is undertaking many efforts to keep the city clean and achieve sustainability. For example, it plans to replace all existing fossil fuel buses with buses that use clean energy by 2040. Also, it is planning to install more solar panels in order to supply power to around 350,000 houses by 2030. I believe this city serves as a good example for cities that want to become more environmentally friendly.

Speaking Skill

예시 제시하기

말하는 내용을 뒷받침하는 예시를 제시할 때 For example, For instance, such as, To give an example 등의 표현을 사용하여 말할 수 있다.

Self-Check

- 1 프레젠테이션을 듣고, 그 내용을 파악할 수 있다.
- 2 지속 가능한 도시에 대해 다른 사람 앞에서 발표할 수 있다.



A Topic Preview

Read the facts about e-waste. Which one do you think is the most shocking? Share your thoughts with your partner. 👤👤



Facts About E-waste

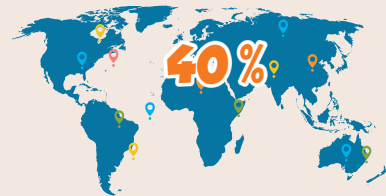


In 2019, the annual amount of global e-waste weighed as much as 350 giant cruise ships.

125 km



If you lined up all the e-waste produced in 2019, it would stretch for 125 kilometers.



Policies to deal with e-waste are imposed only in roughly 40% of the world's countries.

B Vocabulary Preview

Look at the pictures and fill in the blanks using the words from the box.



Throwing batteries in the trash is a fire ¹⁾ _____. You should ²⁾ _____ them in a battery recycling bin.



We need to discover more ways to ³⁾ _____ renewable energy in order to create a(n) ⁴⁾ _____ future.



One way to ⁵⁾ _____ to environmental protection is to use an energy-efficient home ⁶⁾ _____.

sustainable contribute hazard generate appliance discard



Breaking the Cycle:

Solutions to E-waste

On her way to a study group meeting, Liz accidentally dropped her laptop on the street, seriously damaging it. Although it still turns on, the screen is cracked, and some keys are not working. She can have it repaired, but she is hesitating to do so. Sometimes repairs are expensive, and they often take a long time. Besides, the laptop is about five years old. In this case, getting rid of the old one and purchasing a new one might seem like a more reasonable option. In reality, however, it may not be the best thing to do. If Liz throws her laptop in the trash, she will be contributing to a serious problem: e-waste.

Reading Strategy

Identifying Problems and Solutions

글에 제시된 주요 문제 상황과 그에 대한 해결책을 파악하며 읽는다. 또한 각 해결책이 문제 해결에 어떻게 기여하는지 확인한다.



Q1 **Over to You** What did you do the last time one of your electronic devices broke?

cycle
hesitate

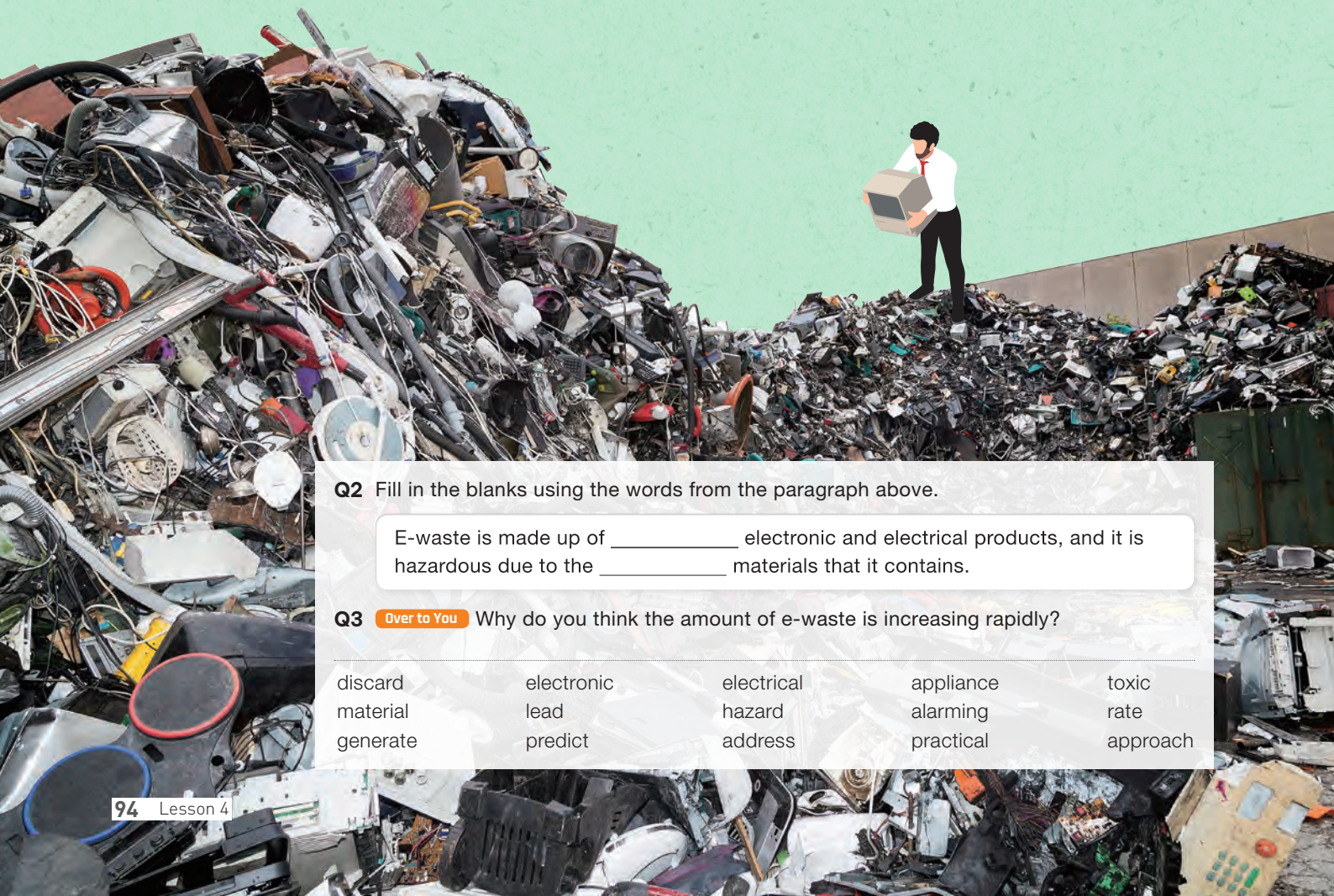
accidentally
reasonable

damage
contribute

crack

repair

What exactly is e-waste? The term refers to discarded electronic devices and electrical appliances. Due to toxic materials contained in these products, such as lead, e-waste is a serious health and environmental hazard. To make matters worse, the amount of e-waste produced each year is increasing at an alarming rate. In 2021, a total of 5 57.4 million metric tons* of e-waste was generated worldwide, which was a 37% increase from 2014, the year when data about e-waste was first collected. Experts predict that by 2030, the amount of e-waste generated annually will have doubled in just 16 years. For this reason, efforts are being made to address this problem, most of which are focused on 10 making products easier to repair. Let's take a look at some practical approaches from around the world. *metric ton 메트릭톤(1,000kg을 1톤으로 하는 중량 단위)



Q2 Fill in the blanks using the words from the paragraph above.

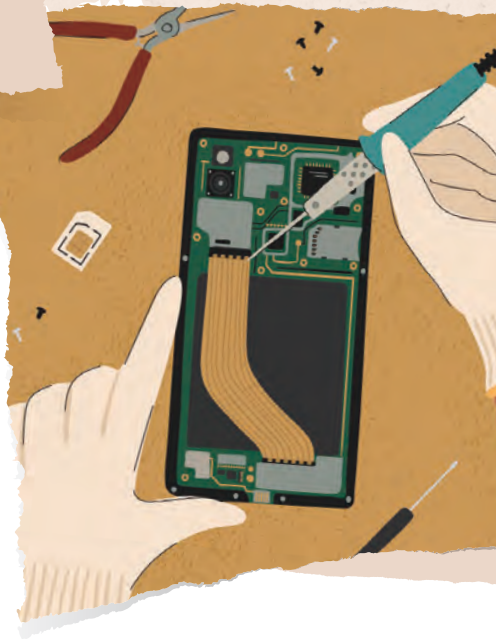
E-waste is made up of _____ electronic and electrical products, and it is hazardous due to the _____ materials that it contains.

Q3 **Over to You** Why do you think the amount of e-waste is increasing rapidly?

discard	electronic	electrical	appliance	toxic
material	lead	hazard	alarming	rate
generate	predict	address	practical	approach

Right-to-Repair Movement: Empowering Consumers

One reason many people dispose of their damaged devices is that they are too difficult to repair. For example, a device may be difficult to disassemble, or its manufacturer may require that it be brought to an official service center to be fixed. Many companies do not allow their customers to take their damaged items to third-party repair shops. What is more, some products are intentionally designed to be difficult to repair. It is common for consumers to be unable to acquire the instructions for how to fix their items or the parts needed to complete repairs.



Background Link

수리할 권리 (Right to Repair)

2012년 매사추세츠주에서 최초의 “right to repair” 법안이 통과된 후, 소비자들은 수리에 필요한 부품을 자동차 제조업체에서 구매할 수 있게 되었다. 이후 자동차 외 전자 제품들에 대해서도 수리할 권리가 보호 받아야 한다는 목소리가 높아졌다.

The right-to-repair movement is trying to solve these problems by promoting legislation that states the following: If you own a product, you have the right to fix it yourself or bring it to a technician of your choice. To protect the rights of consumers, the right-to-repair movement demands four things. First, companies must make information about their products available to everyone. Second, third parties, including individuals, should be able to obtain the parts and tools required to make repairs. Third, the practice of preventing consumers from installing custom software on their own devices should be prohibited by law. Finally, it demands that manufacturers design devices in a way that makes repairs as easy as possible. Advocates of the movement say that if all these goals are accomplished, far less e-waste will be generated. Thanks to their efforts, more than 40 states in the U.S. have begun working on right-to-repair legislation. This movement is gaining a growing influence in Europe as well, with more and more countries joining the cause.

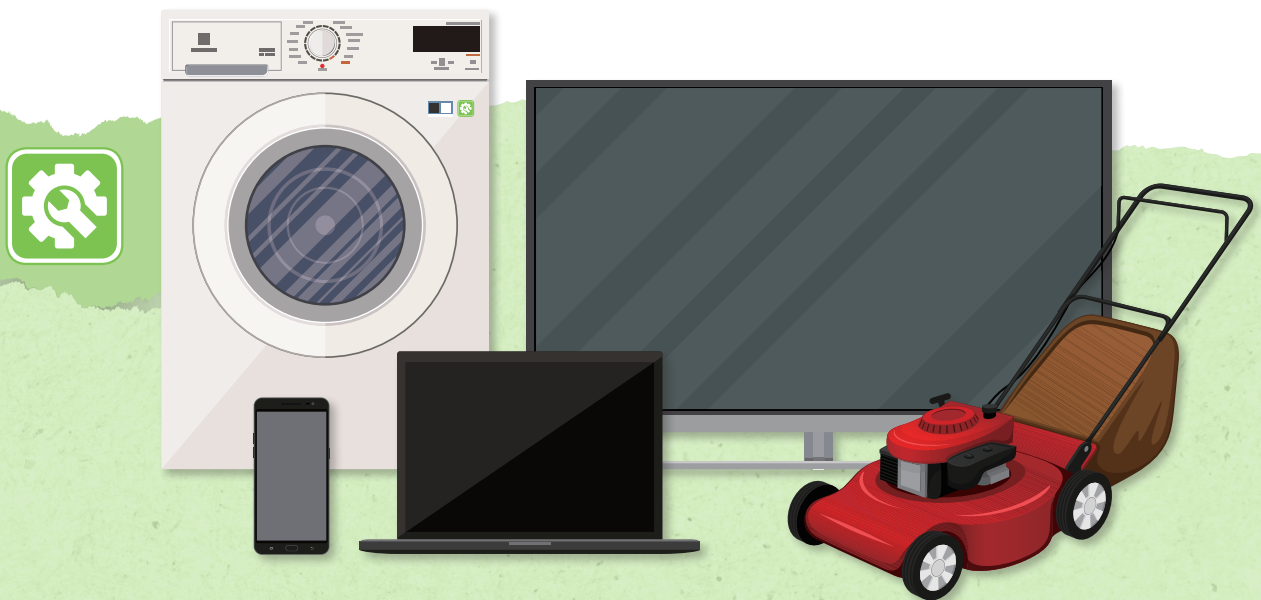


Q4 What is stated in the legislation that the right-to-repair movement promotes?

empower	dispose of	disassemble	manufacturer	intentionally
acquire	legislation	state	demand	obtain
install	custom	prohibit	advocate	cause

Repairability Index: Information at a Glance

In January 2021, the French government passed a bill that requires that every manufacturer include a “repairability index” on five categories of electronic devices and electrical appliances: smartphones, laptops, washing machines, televisions, and lawn mowers. Using a score ranging from 0 to 10, as well as a color-coded system, the index lets consumers see how easily the product can be repaired before they purchase it. The index takes into account several elements, including the availability of repair information, the ease of disassembly, and the price of spare parts. A low number on a bright red label means that repairing the product will be difficult, whereas a high number on a green label indicates that the product is easy to repair.



Q5 What are the five categories of products that are required to indicate their repairability index?

Q6 What does the repairability index tell consumers?

index
take into account

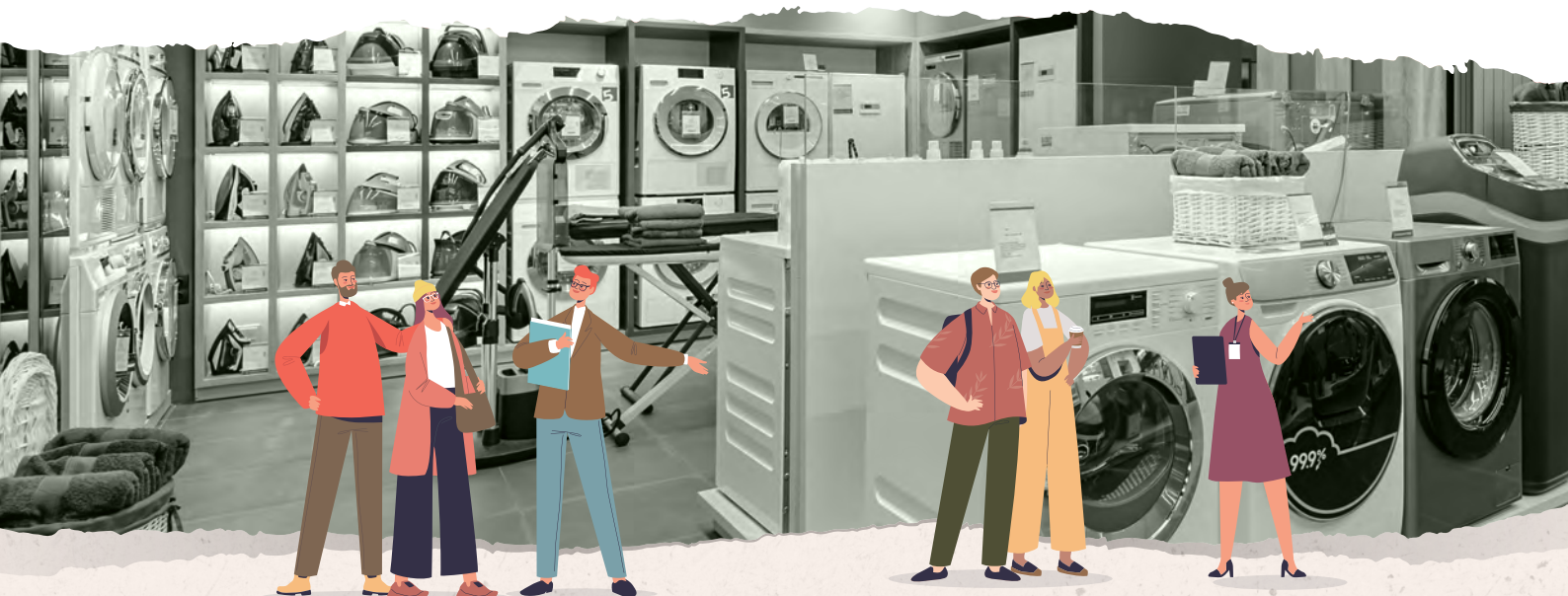
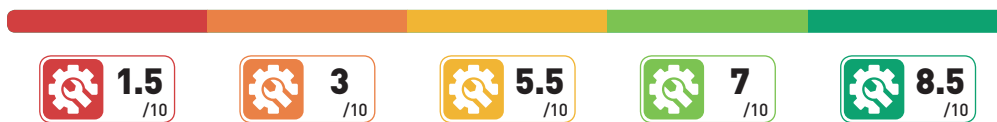
glance
element

bill
spare

lawn mower
label

range
whereas

The index was designed to have two positive effects. Firstly, it allows consumers to make informed decisions when purchasing new devices and appliances. Secondly, it encourages manufacturers to make their products easier to repair. As a result, with fewer electronic and electrical items ending up in its landfills, France can expect to make a transition to a more sustainable society in the near future. The impact of the index, however, is likely to spread far beyond France. We live in a global economy, and any company that wants to sell its appliances on the French market will need to label its products according to the repairability index. If the index is successful, we can anticipate seeing more countries around the world following France's innovative lead.



Q7 **Apply the Strategy** How can the repairability index help solve the e-waste problem?

informed
innovative

landfill

transition

sustainable

anticipate

Repair Cafés: It Takes a Community

When consumers are given the right tools and materials, along with some helpful advice, they can repair much of the damage that occurs to electronic products by themselves. That is why Repair Cafés were started. They are free meeting places where people can gather together and fix their broken devices. The cafés are staffed by volunteer experts 5 who can give technical advice and teach people how to fix things.

The first Repair Café was opened in the Netherlands in the city of Amsterdam in 2009. It was such a success that the idea soon spread to neighboring countries. Before long, there were Repair Cafés in over 30 countries around the world. Along with preventing damaged items from 10 becoming e-waste, these cafés also encourage people to share their invaluable skills and knowledge about the repair and maintenance of electronics. They continue to grow in popularity, with more and more people signing up to volunteer.

By providing spaces where people can 15 learn, Repair Cafés enable individuals to maintain their devices and extend their life spans. Furthermore, they foster a sustainable perspective that can have a huge positive impact on our future. 20



Q8 Fill in the blanks using the words from the paragraphs above.

Repair Cafés are free meeting places where people can _____ their broken devices and get advice from _____ experts.

occur
extend

staff
life span

neighboring
foster

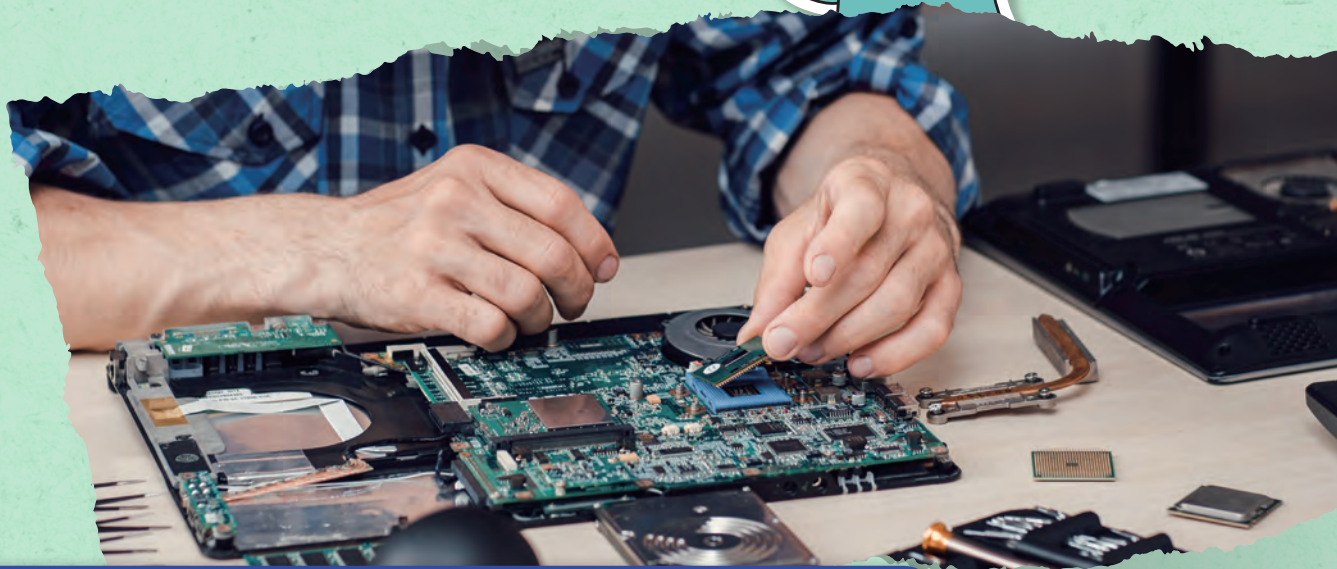
invaluable
perspective

maintenance

Do you remember Liz, the girl who dropped her laptop? Imagine she lived in a world where repairing damaged devices and appliances was simply part of everyday life. If that were the case, her options wouldn't be limited to paying for expensive repairs or throwing away her laptop and buying a new one. She would be able to order the necessary parts online and replace them herself. Alternatively, she could bring her damaged device to the nearest Repair Café to get advice on how to fix it. Repairing it probably wouldn't be very hard, as she likely would have purchased a laptop with a high repairability score.

10 In fact, this sustainable world is a future we can all enjoy if we work toward it together. Even more importantly, it is a future in which people will generate far less e-waste, making our planet a cleaner, healthier place for everyone.

 **Source** www.nytimes.com 외 다수 (p. 165 참조)



Connect to the **Big Question**

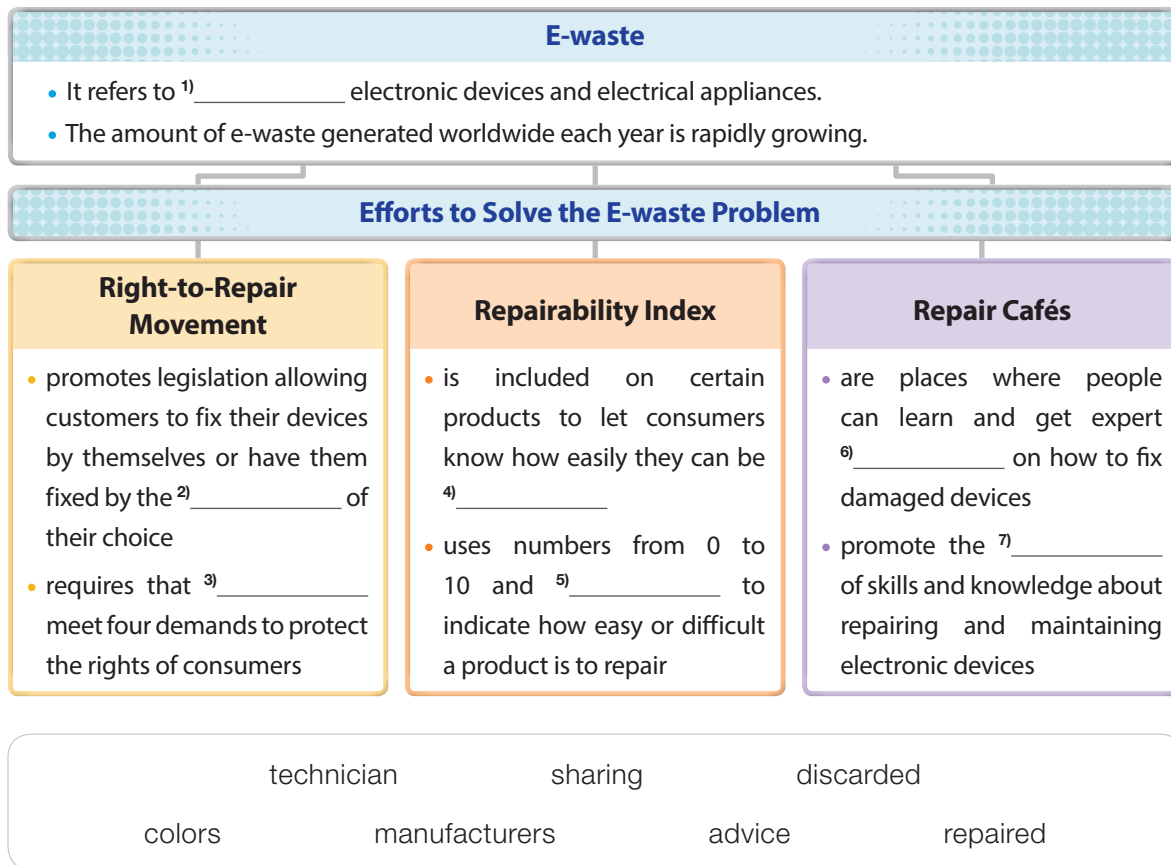
Why is it important to make continuous efforts to reduce e-waste?

limit

alternatively

A Summarize the Text

Fill in the blanks using the words from the box to summarize the main text.



B Check Out the Details

Read the statements and check T for true or F for false based on the main text.

- | | T | F |
|---|--------------------------|--------------------------|
| 1 The global amount of e-waste in 2030 will be three times larger than what it was in 2014. | ☐ | ☐ |
| 2 The right-to-repair movement insists that it should be illegal for customers to install custom software on their devices. | ☐ | ☐ |
| 3 In 2021, a bill was passed in France requiring all electronic products to be labeled according to a repairability index. | ☐ | ☐ |
| 4 The first Repair Café was created in the city of Amsterdam in 2009. | ☐ | ☐ |

C Dive Deeper

Which of the three efforts introduced in the main text do you think is the most effective in reducing e-waste? Share your thoughts with your partner. 



Example

I think Repair Cafés are the most effective and clever way of reducing e-waste because they can provide instant solutions for people with broken devices. They can also change people's perspectives on fixing broken items.

Your Own



D Broaden Your View

Read the following example and search for another way to reduce e-waste. Then share it with your classmates. 

SEARCH solutions to e-waste problem 

Example

E-waste Microfactories

How do they work?

They can extract valuable materials like tin and plastic from electronic devices so that they can be reused to manufacture new products.

What are their benefits?

They can operate in a space as small as 500 square feet and can be placed wherever e-waste is stored, without the need to transport the waste.



Your Own

 _____

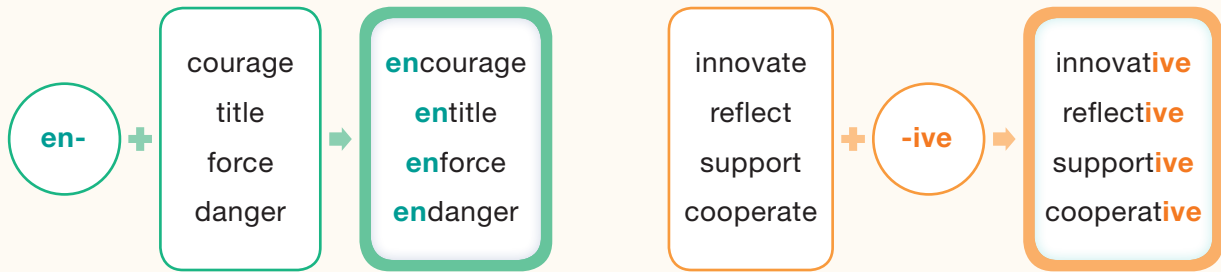
How does it work?

What are its benefits?



Focus on Language

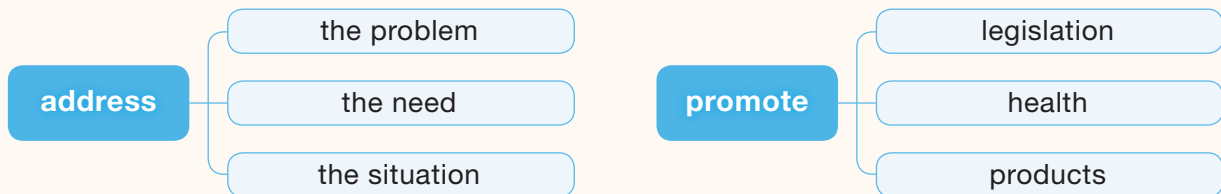
A Word Building



Choose the appropriate word to complete each sentence.

- 1 The composer decided to his new song "Sunrise."
- 2 Having a family can have a positive effect on your emotional stability.
- 3 The counselor her to interact more with others to overcome her shyness.

B Collocation Building



Fill in the blanks using the words from above.

- 1 The mayor's plan addresses the _____ for more public parks in the city.
- 2 A group of activists is working to promote _____ that regulates air pollution.
- 3 Regular exercise and a balanced diet can promote _____ and overall well-being.

Your Own

Make your own sentences using the words or phrases above. Then share them with your partner.

- 1 _____
- 2 _____



Grammar Building

POINT
1

Read and Notice Read the doctor's advice below, paying attention to the structures in bold.

Do you experience pain in your neck? Do your neck muscles feel stiff? I have two suggestions to help you ease your discomfort.

First, I **suggest that** you **sit** up straight. Whether you're working at a desk or looking at your phone, ensure that your neck is properly lined up with your spine. Second, do regular stretching to manage your neck pain. This will help reduce tension in the neck and shoulder muscles.

I **recommend that** anyone with chronic pain **seek** professional help from a doctor. Remember, taking care of your health is essential for living a long and happy life.



Practice Draw a circle if the underlined parts are grammatically correct. If not, correct them.

- 1 The guard requested that I showed my ID card. ()
- 2 Ryan demanded that Amy apologizes for her behavior. ()
- 3 They insisted that everyone to attend the meeting next week. ()

Find More Find the sentence(s) from the main text with the same structure as above.

POINT
2

Read and Notice Read the story below, paying attention to the structures in bold.

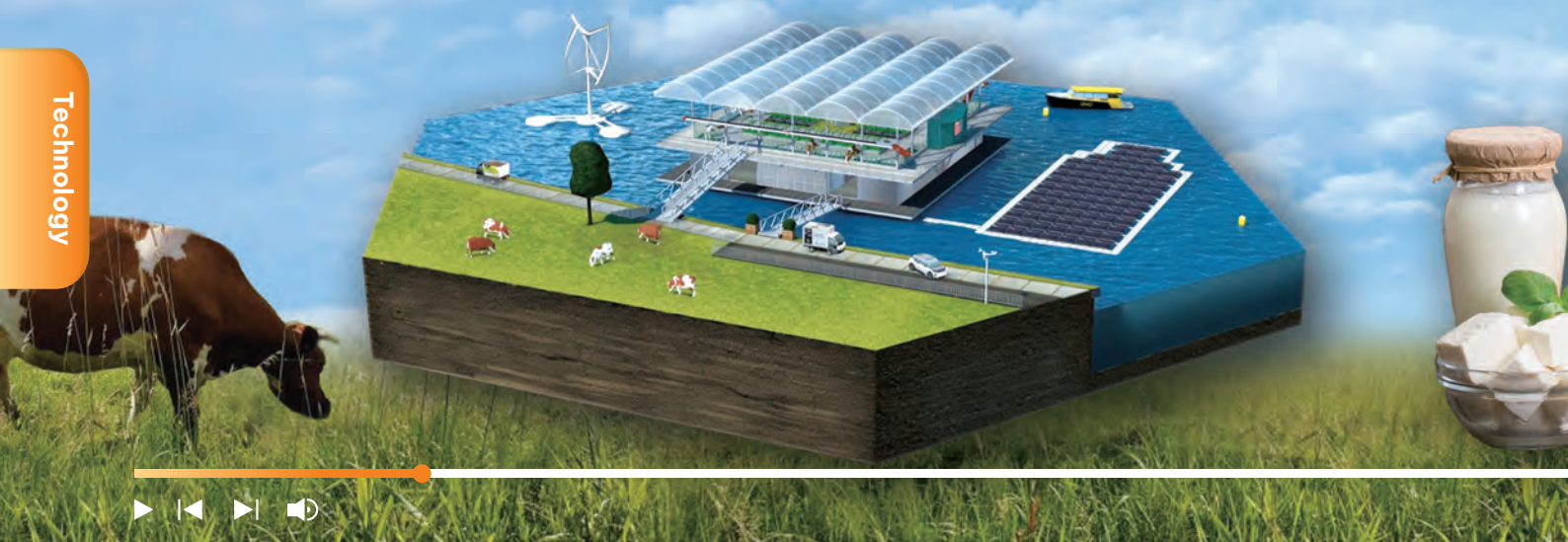
As the rain poured down, Olivia walked into an old café **with** her heart **beating** loudly in her chest. She grasped the letter she had written in her wet hands. She quickly scanned the crowd, hoping to find the man she had to give the letter to. In the distance, she spotted Alex, sitting **with** his arms **crossed** and deep in thought. With each step she took towards him, Olivia felt her unspoken emotions growing stronger. When she finally stood in front of him, she was smiling, **with** tears **falling** down her cheeks.

Practice Complete the sentences using the same grammatical structure as above. Use the given words.

- 1 The boy was listening to the orchestra with his eyes _____. (close)
- 2 With the storm _____, people got scared and fled the city in a hurry. (approach)
- 3 With every judge _____ her, the figure skater delivered a perfect performance. (watch)

Find More Find the sentence(s) from the main text with the same structure as above.

Transformations in Agriculture



A

Before You View

- 1 **Predict** Look at the title and the pictures above. What do you think the video is going to be about?

- 2 **Learn about the Topic** Read the text below. Which is NOT mentioned?

When Hurricane Sandy hit New York City, Dutch couple Peter and Minke van Wingerden were visiting the city. They witnessed how flooding disrupted the transport of fresh food to millions of people, as it prevented trucks carrying food from entering the city. The city's food supply chain was severely affected, and the entire city was running out of fresh food. They realized that such problems will only get worse over time as climate change becomes more severe, especially since major cities depend heavily on food that is transported from far away. They also understood the need for a sustainable solution, and this was where the idea for the "floating farm" in the Netherlands started. This experimental model is prompting farmers to rethink how and where food production should take place in the age of climate crisis.



- a where the idea for the floating farm came from
- b which country the floating farm is in
- c how much it cost to build the floating farm



B

While You View

1 **1st** Watch the video. What is it mainly about?

- a the impact of dairy farming on climate change
- b an innovative way of producing food in the city
- c the unique water transportation system in Rotterdam

2 **2nd** Watch the video again. Which is NOT true according to the video?

- a The dairy products are stored in the bottom layer of the floating farm.
- b The floating farm uses rainwater as drinking water for its cows.
- c The food produced from the floating farm is usually transported far away.

C

After You View

React to the Video Search for another example of sustainable agriculture and share it with your classmates. 

Analyzing Environmental Issues

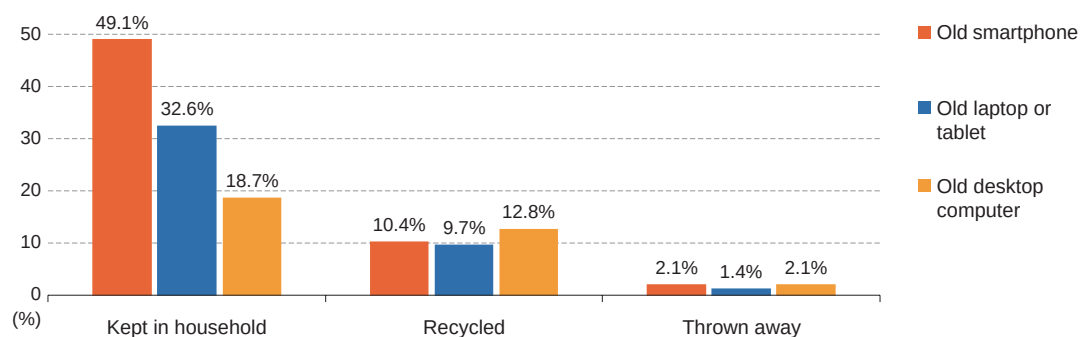
Describing a Graph

You are going to write a paragraph that describes a graph about environmental trends. Focus on comparing the figures and describing the trends or patterns shown in the graph.

A Sample Analysis

Digital Device Disposal Methods in the EU, 2022

(Source: eurostat)



This graph shows how individuals in the EU dealt with digital devices that they no longer used in 2022. According to the graph, the percentage of people who kept their devices at home was the highest across all categories. Nearly 50% of people kept their old smartphones at home. On the other hand, only 18.7% of people kept their old desktop computers at home, which was about six percentage points higher than the percentage of people who chose to recycle them. Among all of the devices that were recycled, old laptops or tablets were recycled by the smallest percentage of people. However, this was still higher than the total percentage of people who just threw their devices away. From this graph, we can see that people often keep unused digital devices at home rather than recycling or throwing them away.

(A)

(B)

(C)

Fill in the boxes above with the appropriate subtopics.

Findings from the Graph

Topic of the Graph

Description of the Graph



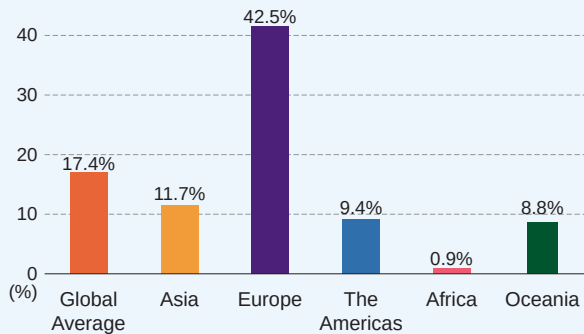
Write Your Own

Step 1 Prepare to Write

Read the graph and fill in the blanks.

Regional E-waste Recycling Rates, 2019

(Source: United Nations University)



1 Topic of the graph

2 Description of the graph

(1) Europe

(2) Asia

(3) Africa

3 Findings from the graph

Step 2 Write Your Paragraph

Write your own paragraph based on the information in **Step 1**.

The graph above shows _____.

According to the graph, Europe _____.

_____.

Asia _____.

followed by _____ and _____.

Africa _____.

From this graph, we can see that _____.

_____.

Writing Skill

그래프를 설명할 때는 수치를 정확히 확인하고 그래프의 변화를 상세히 분석하여 설명하는 것이 좋다.

• Examine your draft first. Then ask your partner to check your draft using the list below.

Checklist		Self	Partner
		☆☆☆☆☆	☆☆☆☆☆
	이 글은 그래프의 수치를 상세히 분석하여 설명하고 있다.	☆☆☆☆☆	☆☆☆☆☆
	이 글은 정확한 문법과 적절한 단어를 사용하고 있다.	☆☆☆☆☆	☆☆☆☆☆
Partner's Comment			

☒ online writing assistance 또는 online proofreading tool을 이용해서 철자, 구두점, 문법 오류 등을 점검해 보세요.

Step 3 Revise and Present Your Writing

Revise your paragraph based on the feedback. Then present it to the class.

A

Listen and Search



1 Listen to the conversation. What are the speakers mainly talking about?

- a an industry's recycling efforts
- b the danger of indiscriminately using cosmetics
- c the environmental impact of plastic waste

2 Search for what other companies are doing to promote environmental sustainability.

Example

A clothing brand offers discounts for customers who bring old clothes to be recycled.

Your Own

B

Read and Write

Read the text below and answer the following questions.

Have you ever wondered how far the food on your plate has traveled? With advances in transportation technology, food is transported farther than ever before, mostly by air. We can even purchase exotic or rare food that was grown more than 10,000 kilometers away. Transporting food over such long distances generates large quantities of carbon dioxide, with air shipment producing almost 50 times more than sea shipment. Also, food that is traveling over a long distance is often highly processed using preservatives and other means to prevent it from spoiling. If we want to reduce our carbon footprint* and consume healthier food, we should be mindful of our choices. For example, we should try to buy locally-grown produce. This supports local farmers and is better for the environment. Furthermore, consuming seasonal local food can also be better for our health.

*carbon footprint 탄소발자국(개인이나 단체가 직간접적으로 발생시키는 온실가스의 총량)

1 What is the environmental impact of transporting food over long distances?

2 How can you reduce your carbon footprint in your daily life? Write down what you can do.

Take
the
stairs.



Choose
reusable
items.



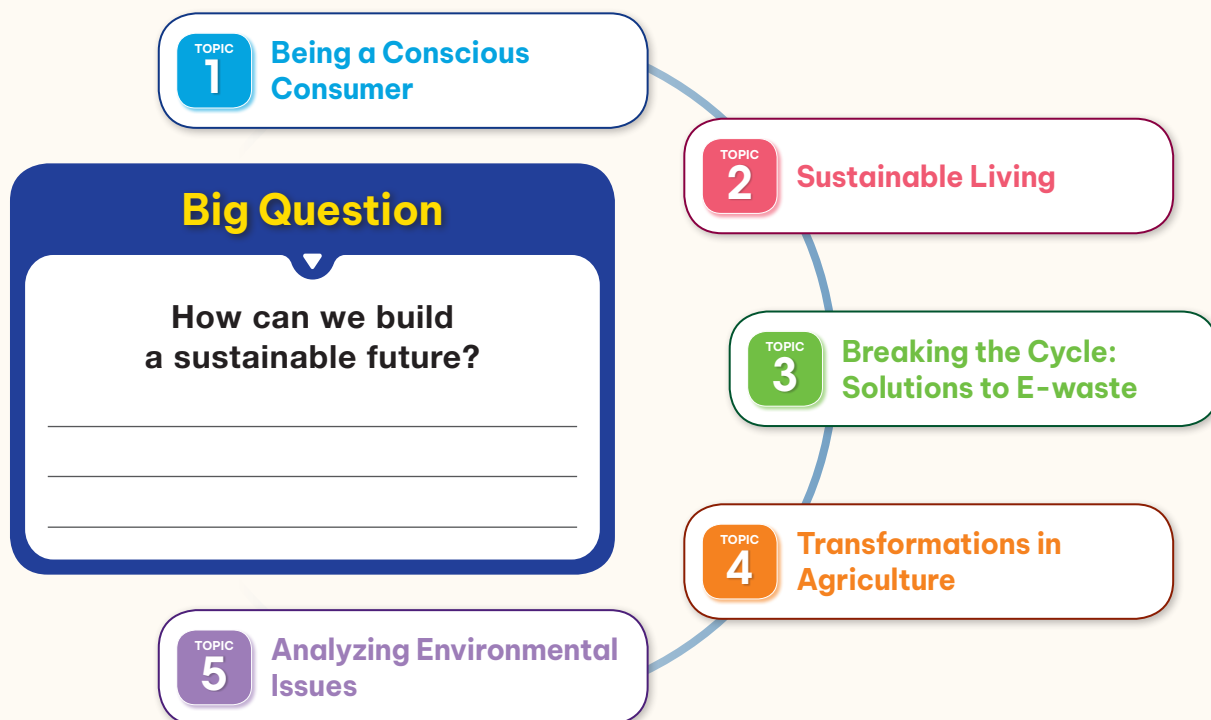
Walk or
ride
a bike.



Your Own

C Answer the Big Question

In this lesson, you have learned about various topics related to the Big Question. Now think about what you've learned and answer the Big Question.



D Check Your Progress

Look through what you've learned in this lesson and reflect on your learning and attitude below.

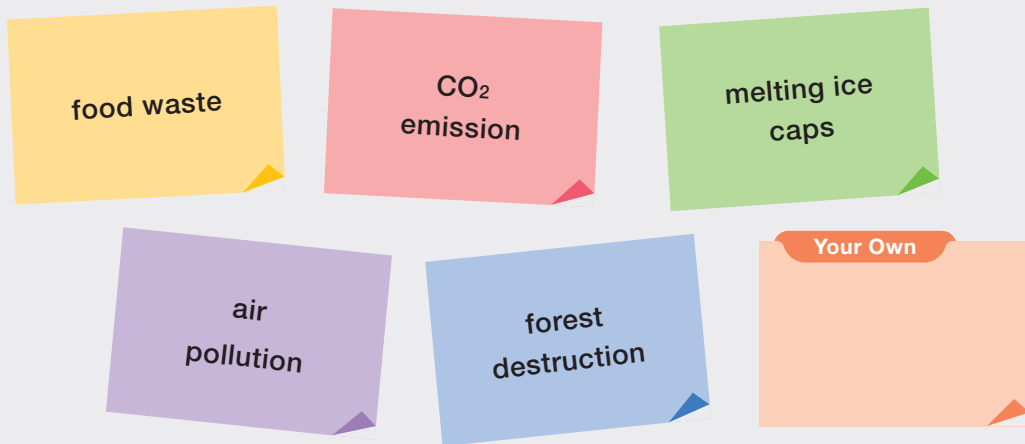
My Learning	
나는 이번 단원에서 배운 내용을 충분히 이해했다.	😊 😐 😞
나는 이번 단원에서 배운 표현과 어휘를 활용하여 말하거나 쓸 수 있다.	😊 😐 😞
나는 이번 단원에서 배운 주제에 대해 나의 생각이나 의견을 표현할 수 있다.	😊 😐 😞
Q. 이번 단원에서 배운 내용 중 가장 중요하다고 생각하는 것은 무엇인가? _____	

My Attitude	
나는 학습 중에 새로운 정보를 잘 이해하고 있는지 스스로 점검했다.	😊 😐 😞
나는 수업에 자발적이고 적극적으로 참여했다.	😊 😐 😞
나는 실수를 두려워하지 않고 나의 생각이나 의견을 자신감 있게 표현했다.	😊 😐 😞
Q. 앞으로 계속 발전시켜야 하는 태도는 무엇인가? _____	

- **Your Task** You are going to make a poster to raise awareness about ensuring a sustainable future.

STEP 1

Make a group of four and discuss what kind of environmental issues or challenges we have faced.



STEP 2

Choose a topic from above and search for more information about it. Then decide what messages your group is going to convey with the poster.

Example

Environmental issue or challenge:

Too much food waste is generated every day.

Facts about it:

- More than 20,000 tons of food waste is generated in Korea every day.
- Food waste accounts for 8 to 10% of global greenhouse gas emissions.

Messages your group would like to deliver:

- We need to think about the environmental impact of wasting food.
- We should be mindful of the food we buy, cook, and eat in order to reduce the amount of food waste.

Your Group

Environmental issue or challenge:

Facts about it:

-
-

Messages your group would like to deliver:

-
-

STEP 3

Come up with a slogan for your group's poster.

Example

- Plate to Planet: Think Before You Toss

Your Group

Tip Make your slogan short and simple, but catchy.

STEP 4

Design a poster with the slogan and an image that can effectively convey the message of your group.

Example



Your Group

STEP 5

Present your group's poster to the class and put it on the classroom wall.



Example

We created a poster about food waste to raise awareness about its environmental impact. The slogan on the poster says, "Plate to Planet: Think Before You Toss." We created this slogan to emphasize that we need to think about the environmental impact of wasting food...

Monitor Your Work

1 모든 조원이 프로젝트에 적극적으로 참여하고 원활히 협업했다.

Y

N

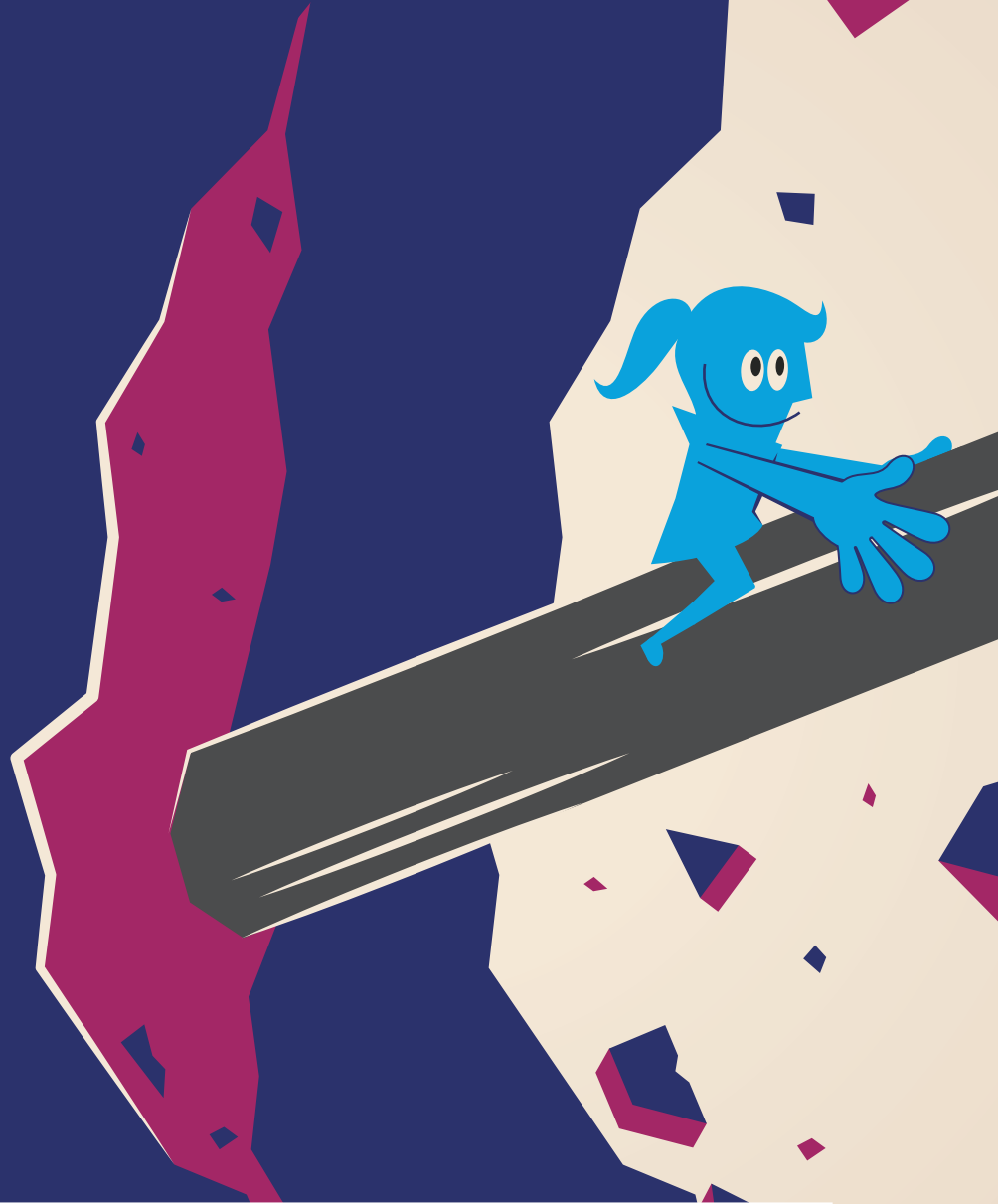
☐
☐

2 우리 조의 포스터는 환경 문제에 대한 메시지를 슬로건을 통해 효과적으로 전달한다.

☐
☐

3 이 활동에서 배운 점:

Open Your Mind, Defeat Your Biases



Study Points

Functions

- 금지하기

We should not use that phrase.

- 의견 표현하기

It seems to me that it reinforces biases against people with disabilities.

Structures

- Their research showed undeniable evidence **that** its smooth surface was not always left bare.
- Over a period of more than 1,000 years, much of the paint **with which** these sculptures were originally decorated wore off.

Big Question

How can we deal with biases and stereotypes?

TOPIC

1

Listen & Speak

Behind Your Thoughts

TOPIC

2

In Real Life

Don't Judge a Book by Its Cover

TOPIC

3

Read

The Colorful Truth About Ancient Sculptures

Art

TOPIC

4

View & Learn

The Way We Interpret the World

Psychology

TOPIC

5

Write & Share

Combating Misconceptions

Behind Your Thoughts



금지하기 We should not use that phrase.

의견 표현하기 It seems to me that it reinforces biases against people with disabilities.

A

Get Ready

1 Read the following statements and think about the bias behind each one.



1 That old man can't be good at playing sports.

2 He was able to succeed even though he has a disability.

3 She seems nice for a person with a rough appearance.

4 She's a good leader even though she is young.

5 He is quite sensitive and delicate, unlike other boys.



Can you think of another statement that contains a common bias?

2 Listen to the conversation. Check T for true or F for false.

The boy's grandmother didn't enjoy the baseball game. (T ☐ / F ☐)

B

Listen In

1 **1st** Listen to the conversation. What are the speakers mainly talking about?

- a how biases limit our abilities
- b an expression that supports biases
- c a pianist who fought against biases

2 **2nd** Listen again. What will the speakers most likely do after the conversation?

- a read a newspaper article
- b write an email to a journalist
- c search for other biased expressions

C Speak Together

Step 1 Read the following example and write about an experience that made you aware of a bias you had.

Example

What bias did you have?

I thought that boys were bad at art.

What changed your perspective?

When Jiho volunteered to draw the poster for the school festival, I didn't expect him to be a good artist. However, his poster was really cool.

What did you learn from this experience?

We should not make assumptions about people's abilities based on their gender.

Your Own

What bias did you have?

What changed your perspective?

What did you learn from this experience?

We should not _____

Step 2 Talk with your partner about what you wrote in **Step 1**. 

Example

A: Have you ever had any biases?

B: Yeah, I thought that boys were bad at art. But I recently realized I was wrong.

A: What changed your perspective?

B: When Jiho volunteered to draw the poster for the school festival, I didn't expect him to be a good artist. However, his poster was really cool. It changed my perspective.

A: Did you learn something from this experience?

B: Yes, I did. We should not make assumptions about people's abilities based on their gender.

A: **It seems to me** that you learned an important lesson.

Self-Check

1 금지하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.

😊 😐 😞

2 의견을 표현하는 말을 듣고 이해할 수 있으며, 그것을 활용하여 말할 수 있다.

😊 😐 😞

Don't Judge a Book by Its Cover



A

Listen to the Radio Broadcast

1 **1st** Listen to the radio broadcast. Which is NOT mentioned about the library?

- a where it first started
- b what it is aiming to do
- c how many human books it has

2 **2nd** Listen again. Fill in the blanks to complete the advertisement for the Human Library.



Human Library Grand Opening!



The Human Library will open on September 20!

Come and borrow a(n) ¹⁾ _____ book to talk with.

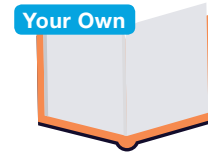
You can meet someone of a different race or religion.

It will bring ²⁾ _____ and understanding.

B

Present Your Ideas

Step 1 Read the following example and think about who you would like to borrow from the Human Library.



Example	Your Own
Who would you like to talk to? a homeless person What prejudices do people have? - They are lazy and not willing to work. - They are uneducated. What question would you like to ask? Can you please tell me about your life?	Who would you like to talk to? What prejudices do people have? - - What question would you like to ask?

Step 2 Prepare a short speech about what you wrote in **Step 1** and share it with your classmates.

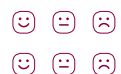
Example

I would like to talk to a homeless person to gain a deeper understanding of them and confront my biases. People usually think that they are lazy and not willing to work. It is also commonly assumed that they are uneducated. I want to discover more about them by asking questions like, "Can you please tell me about your life?" I believe I can expand my horizons through a genuine and honest conversation with the person.



Self-Check

- 1 라디오 방송을 듣고, 그 내용을 파악할 수 있다.
- 2 특정 대상에 대해 가지고 있는 편견에 대해 다른 사람 앞에서 발표할 수 있다.



A Topic Preview

Look at the two different versions of an ancient statue. Share your answers to the following questions with your partner. 👤👤



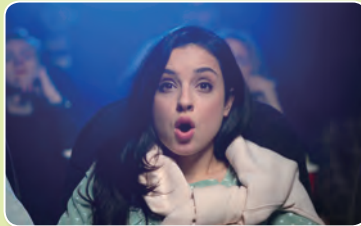
What are the differences between these two statues? How do you feel about them?

B Vocabulary Preview

Look at the pictures and read the sentences. Guess the meaning of each word in bold using context clues.



The artist spent several months creating a beautiful **sculpture** from clay.



The audience was **astonished** by the shocking ending of the horror movie.



The color of my favorite shirt has **faded** after many years of wearing it.



The **contrast** between black and white is outstanding in this artwork.



The positive reviews of his new book **reinforced** his reputation as a great writer.



Many people **associate** summer with vacations at the beach.



The Colorful Truth About Ancient Sculptures

In the early 1980s, Vinzenz Brinkmann was studying archaeology as a graduate student at the University of Munich. He wanted to figure out a way to closely examine the marks left by tools on ancient Greek and Roman marble sculptures, so he developed a special ultraviolet lamp that would reveal marble surfaces in great detail. When Brinkmann shone his lamp on the sculptures, he was astonished to see something that he had not expected. There were clear signs of polychromy: the use of various colors in the decoration of statues or works of architecture.

Q1 What was Brinkmann's original reason for developing a special ultraviolet lamp?

Q2 What did Brinkmann discover when he shone his lamp on the sculptures?

ancient
marble
decoration

sculpture
ultraviolet
statue

archaeology
surface
architecture

graduate student
shine

mark
astonished

Reading Strategy

Identifying Cause and Effect

글에 드러난 원인과 결과의 관계를 파악하며 글의 흐름을 이해한다. because, since, due to, thanks to, consequently, as a result 등의 표현이 등장하는 부분에 집중한다.

Brinkmann was curious, so he decided to investigate his findings further by examining more ancient statues. To his surprise, he found evidence of polychromy on almost every statue he looked at. He soon realized that many of these traces could be detected without his special lamp. They could even be seen clearly with the naked eye. Brinkmann continued to research polychromy in ancient statues with his wife, archaeologist Ulrike Koch-Brinkmann. Their research showed undeniable evidence that, while white marble was a highly valued material for Greek and Roman sculptors, its smooth surface was not always left bare. Instead, the white marble was used like a canvas. Vivid pigments could be applied in order to decorate the sculptures in many rich colors, from yellow, red, and green to blue, pink, and even gold.



▲ Phrasikleia Kore



Q3 Check T for true or F for false.

Traces of color left on the ancient statues could be seen with the naked eye. (T ☐ / F ☐)

Q4 **Over to You** Why do you think ancient sculptors decorated their sculptures with various colors?

investigate
undeniable
apply

evidence
bare

trace
canvas

detect
vivid

naked
pigment



Does this discovery seem surprising? If someone asks you to imagine a Greek or Roman statue, a pure white divine figure will probably come to mind. However, Brinkmann and Koch-Brinkmann's research revealed that this image is actually inaccurate. Where did this misconception
 5 about ancient art come from, and when did it first arise? In fact, it dates back hundreds of years.

White marble has been considered the standard material for sculpture in Western art since the Renaissance, when many ancient sculptures of Greece and Rome were being excavated and newly admired for their
 10 artistic beauty. Over a period of more than 1,000 years, much of the paint with which these sculptures were originally decorated wore off. Any paint that remained was faded, and more of it came off during the excavation process itself. As a result, when these ancient statues were
 15 taken out of the ground, their surfaces were plain white marble. People of the Renaissance marveled at the smoothness of the white marble and the striking manner in which it enhanced the contrast of light and shadow.

Background Link 🔗

르네상스(Renaissance)

14세기부터 16세기 사이에 유럽에서 일어난 문화 운동으로 예술의 부활, 재생을 의미한다. 문학, 미술, 건축 등 다방면에 걸쳐 그리스와 로마 문화를 부흥하고자 하였다.

Q5 What happened to ancient Greek and Roman sculptures over a period of more than 1,000 years?

pure	divine	inaccurate	misconception	arise
excavate	admire	wear off	fade	plain
marvel	striking	enhance	contrast	

Background Link 🔗

Apollo Belvedere

그리스·로마 신화 속 아폴로의 모습을 형상화한 약 2.2m의 대리석상으로, 15세기 말에 이탈리아 중부 지역에서 발견되었다. 왼손에 아폴로의 상징인 활을 들고 있는 모습이었을 것으로 추정된다.

In the year 1489, an ancient Roman sculpture, which became known as the *Apollo Belvedere*, was dug up in Italy. Renaissance artists were amazed by how its bare stone surface highlighted the elegant outline of the sculpted body. This discovery reinforced the artists' admiration for white marble. Both artists and scholars began to associate undecorated 5 white marble with ideal beauty. The great Renaissance artist Michelangelo was no exception. He even traveled to different quarries* around Italy in order to purchase high-quality white marble for his own sculptures.

*quarry 채석장



◀ Apollo Belvedere

Q6 What did Renaissance artists and scholars associate undecorated white marble with?

dig up
scholar

highlight
associate

elegant
exception

outline

reinforce

The Renaissance public's appreciation of bare white stone led to a bias against using color to decorate sculptures, and this resulted in Renaissance artists leaving most of their marble creations unpainted.

Over time, the association of whiteness with artistic beauty grew
5 strong in people's minds, and it became deeply rooted in Western art and culture. A German scholar who was one of the founders of art history in the West even remarked, "the whiter the body is, the more beautiful it is."

Despite the excavation of ancient Greek and Roman artifacts with traces of color in the 18th and 19th centuries, the bias toward white
10 marble sculpture was so firmly established that people's perceptions did not alter. Many scholars simply refused to believe that polychromy was used, while those who did were publicly criticized. Sculptures painted with bright colors and patterns were regarded as inferior works created by immature artists. Some insisted that Greek and Roman artifacts
15 bearing obvious traces of color were in fact from other civilizations that existed before ancient Greece. Until the 1960s, sculptures with noticeable color were largely ignored. Some of them even had their colors wiped off so that the bare white surface beneath could be seen. For these reasons, the misconception that formed during the Renaissance lasted all the way
20 into the 20th century.

Q7 **Over to You** Do you agree with the German scholar's statement that white sculptures are more beautiful? Why or why not?

Q8 Check T for true or F for false.

Some ancient sculptures had their colors intentionally wiped off. (T ☐ / F ☐)

appreciation	bias	rooted	founder	remark
artifact	firmly	establish	alter	criticize
regard	inferior	immature	insist	bear
civilization	noticeable	wipe	beneath	form



▲ Statue of the goddess Artemis

However, since the 1980s, thanks to the development of new methods of scientific analysis and the work of scholars such as Vinzenz Brinkmann and Ulrike Koch-Brinkmann, the bias about white marble sculptures has been changing. As research has progressed, it has become increasingly clear that polychromy was not only present but also common among ancient Greek and Roman sculptures. The fact that Greek and Roman artists normally decorated their sculptures with vivid colors is now widely acknowledged.

Brinkmann and Koch-Brinkmann have gathered sufficient evidence of the colorful past of many sculptures. They have also created new, colored versions of some of these great works of art, both to benefit research and to enlighten the public. These colorful recreations have been displayed in an exhibition called *Gods in Color*, which has traveled to over 20 different cities around the world and has expanded the understanding of millions of museum visitors since 2008. The colorful replicas are displayed next to white plaster versions made to look like the marble originals, and in some cases the originals themselves. The contrast has provided an eye-opening experience for the public, challenging artistic biases and deeply rooted misconceptions.



▲ Reconstruction of a statue of the goddess Artemis

Q9 **Apply the Strategy** What contributed to the change in people's attitudes towards polychromy in ancient sculptures?

analysis	progress	sufficient	enlighten	recreation
exhibition	replica	plaster		

Brinkmann believes that we need to transform our eyes into objective tools in order to overcome widespread misconceptions. There is an important lesson to be learned from this story. Shouldn't we pause to ask ourselves if some of our long-held beliefs are the results of stereotypes and biases? Perhaps there is more to the world than meets the eye.

 **Source** www.newyorker.com 외 다수 (p. 165 참조)



▲ White and colored versions of a head portrait of the Emperor Gaius Julius Caesar Augustus Germanicus

Connect to the
Big Question

What role can the academic world play in eliminating biases and stereotypes?

transform

objective

overcome

pause

stereotype

A Summarize the Text

Fill in the blanks using the words from the box to summarize the main text. Then number each part in time order.

1	During the time of ancient Greece and Rome, many sculptors painted their sculptures with vivid colors.
	In the 1980s, an archaeologist named Vinzenz Brinkmann discovered signs of ¹⁾ _____ on ancient sculptures and decided to investigate them further with the help of Ulrike Koch-Brinkmann.
	Amazed by the beauty of ancient sculptures like the <i>Apollo Belvedere</i> , people of the Renaissance began to think of ²⁾ _____ as an element of perfect beauty.
	Vinzenz Brinkmann and Ulrike Koch-Brinkmann recreated the ³⁾ _____ versions of ancient sculptures to display them in a(n) ⁴⁾ _____ and enlighten the public.
	These ancient sculptures were excavated during the ⁵⁾ _____. Their surfaces were often bare white stone, as the original paint had worn off over time.
	The bias toward white sculptures was so widespread in Western art that people started to ⁶⁾ _____ the traces of colors found on sculptures excavated in the 18th and 19th centuries.

whiteness	ignore	colored
Renaissance	polychromy	exhibition

B Check Out the Details

Read the statements and check T for true or F for false based on the main text.

- | | T | F |
|--|--------------------------|--------------------------|
| 1 Vinzenz Brinkmann discovered traces of colors on ancient Greek and Roman sculptures by accident. | ☐ | ☐ |
| 2 Michelangelo didn't associate white marble with ideal beauty. | ☐ | ☐ |
| 3 Although polychromy existed in ancient Greece and Rome, it was not a common practice. | ☐ | ☐ |

C Dive Deeper

Have your ideas about ancient Greek and Roman sculptures changed after reading the main text? Share your answer with your partner. 



Example

I realized that I also had the bias that ancient Greek and Roman sculptures were beautiful because of their whiteness. I still find colorful sculptures a bit unusual, but I think they are more visually appealing.

Your Own



D Broaden Your View

Read the following example and search for another misconception that was proven wrong. Then share it with your classmates. 

SEARCH popular misconceptions, misconceptions and facts 

Example



Misconception

Left-brained people are logical and better at math and language, while right-brained people are creative and better at art and music.

Fact

While it is true that different brain regions are associated with specialized functions, the left and right parts of the brain work closely together when performing tasks. Both parts are involved in both logical and creative work. So the idea that people can be categorized as exclusively left-brained or right-brained is not accurate.

Your Own

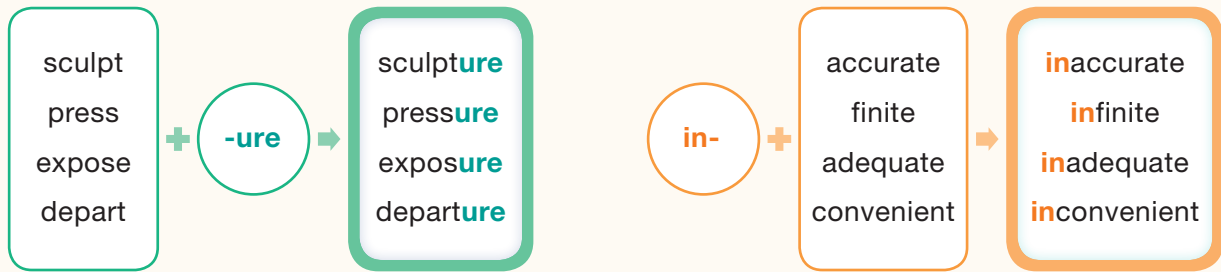


Misconception

Fact

Focus on Language

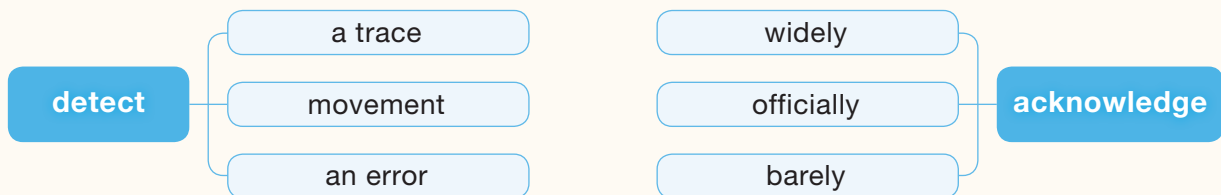
A Word Building



Choose the appropriate word to complete each sentence.

- 1 The traffic jams during rush hour are very for drivers.
- 2 Excessive to loud noise can cause permanent hearing loss.
- 3 The flight's was delayed by two hours due to the weather conditions.

B Collocation Building



Fill in the blanks using the words from above.

- 1 His boss _____ acknowledged his dedication, which led him to quit.
- 2 When the security camera detects _____, it triggers an alarm system.
- 3 If the software detects a(n) _____, it will generate a warning message.

Your Own

Make your own sentences using the words or phrases above. Then share them with your partner.

- 1 _____
- 2 _____



Grammar Building

POINT
1

Read and Notice Read the newspaper article below, paying attention to the structures in bold.

Space News	no.17428 April 27, 2008
Traces of Water on Mars Scientists have found compelling evidence that water once flowed on the surface of Mars. This remarkable discovery is shifting the existing view that the planet lacks this vital resource. Enthusiastic discussion within the scientific community has followed the announcement. The presence of traces of water supports many scientists' claim that life may have once flourished on the Red Planet. This new evidence will likely transform our understanding of Mars.	

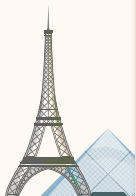
Practice Complete the sentences by unscrambling the given words.

- 1 I heard _____ last week. (that / his novel / the news / was published)
- 2 _____ was proven wrong by the test. (the medicine / that / the rumor / didn't work)

Find More Find the sentence(s) from the main text with the same structure as above.

POINT
2

Read and Notice Read the tour guide below, paying attention to the structures in bold.



All right, everyone. Now if you look to your left, you will see the Eiffel Tower, the most recognizable symbol of Paris. Did you know that it was completed in 1889, the year **in which** the World's Fair was held in Paris? It served as the main attraction at the fair. Today, the tower is the reason **for which** many people visit this romantic city. Our next stop is the Louvre Museum. It is home to a collection of more than 480,000 objects. After the Louvre, we will stop by a famous coffee shop **at which** legendary writers such as Albert Camus and Ernest Hemingway used to gather.

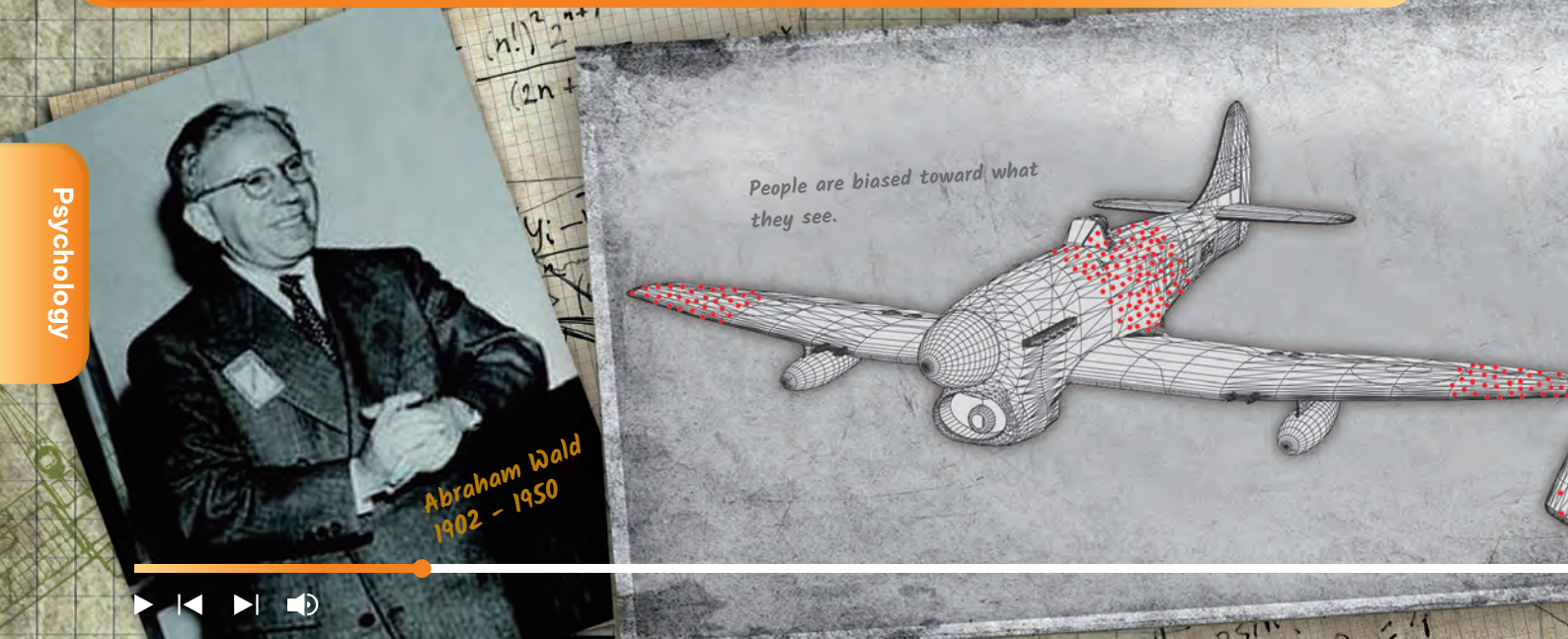


Practice Combine the two sentences using the same grammatical structure as above.

- 1 I'm afraid that the position has already been filled. You applied for the position.
→ _____
- 2 The park has a designated area. People can set up their tents in the designated area.
→ _____

Find More Find the sentence(s) from the main text with the same structure as above.

The Way We Interpret the World



A

Before You View

- Predict** Look at the title and the picture above. What do you think the video is going to be about?
- Learn about the Topic** Read the text below and fill in the blanks using the words from the text.

Sometimes we have to make decisions based on insufficient or imperfect information. When we do, we tend to rely on our own experiences. This can influence how we make judgments about the world around us. For instance, we might guess someone's gender based on their job, or unquestioningly accept someone's word just because he or she is an expert. As a result, we may end up believing something that is untrue. These systematic errors in our thought processes are called "cognitive biases."



There are about 180 different types of cognitive biases. "Survivorship bias," for example, is an inclination to focus only on individuals or things that have succeeded or survived, while ignoring those that have not.

→ Cognitive biases are systematic ¹⁾ _____ in our thought processes, such as believing something that is ²⁾ _____, that can influence our decision making.



B

While You View

1 **1st** Watch the video. What is it mainly about?

- a a historical example of overcoming a bias
- b how manipulated data affects our perspective
- c the role of statistics in making unbiased decisions

2 **2nd** Watch the video again. What was the problem with the first approach of Abraham Wald's team?

- a They did not test their hypothesis on the actual planes.
- b They did not take into account the planes that had not returned.
- c They did not consider the skill of the pilots who flew the planes.

C

After You View

React to the Video Search for another type of cognitive bias and think about your own experiences related to it. Then share them with your partner. 👤👤

Combating Misconceptions

Writing a Biography

A biography is a detailed description of a person's life, including the person's key achievements and reputation today. You are going to write a biography of a person who contributed to fighting against a bias, stereotype, or misconception.

A Sample Analysis



Rachel Carson (1907-1964) was an American biologist and author who warned the world about the hazards of pesticides. She fought against the general misconception that pesticides, specifically DDT, which was widely used in gardens and homes, were harmless to the environment and humans. To fight against this, Carson wrote a book, *Silent Spring*, which offers proof that DDT can cause cancer and genetic damage once it has accumulated in the human body. As a result, her book altered public awareness of the dangers of DDT and ultimately led to a national ban on the chemical in the United States. Carson is now widely considered to have been a leading figure in environmentalism and is often referred to as the “mother of environmental movements.”

Introduction of the Person

(A)

The Action the Person Took

(B)

(C)

Fill in the boxes above with the appropriate subtopics.

The Person's Reputation
Today

The Misconception
the Person Fought Against

The Result of the Action

B Write Your Own

Step 1 Generate Ideas

Search for a person who fought against a bias, stereotype, or misconception.

Example



Langston Hughes (1901-1967)
a poet, novelist, and social activist

He fought against stereotypes about African Americans.

Your Own



Step 2 Develop Your Ideas

Answer the questions below to develop your ideas.

- 1 Who is the person you want to write about?

- 2 What bias, stereotype, or misconception did he/she fight against?

- 3 What action did he/she take and what was the result?

- 4 What is his/her reputation today?

Step 3 Write the Biography

Write the biography of the person you chose based on your answers in **Step 2**.



_____ was a(n) _____
who _____
_____ fought against _____
To fight against this, _____
As a result, _____
_____ is now _____

Writing Skill

전기문은 특정 인물의 일생에 대한 내용을 사실에 기반하여 작성해야 한다. 인물의 업적 및 주요 사건을 중심으로 인물에 대한 현대의 평가 등도 포함하는 것이 좋다.

- Examine your draft first. Then ask your partner to check your draft using the list below.

Checklist			Self	Partner
	이 전기문은 인물의 업적과 그에 대한 평가를 명확하게 서술하고 있다.		☆☆☆☆☆	☆☆☆☆☆
	이 전기문은 정확한 문법과 적절한 단어를 사용하고 있다.		☆☆☆☆☆	☆☆☆☆☆
Partner's Comment				

☒ online writing assistance 또는 online proofreading tool을 이용해서 철자, 구두점, 문법 오류 등을 점검해 보세요.

Step 4 Revise and Present Your Writing

Revise the biography based on the feedback. Then present it to the class.

A

Listen and Write



1 Listen to the conversation. What is the problem with the film the boy watched?

- a It doesn't have enough racial diversity.
- b It includes a character that is depicted in a racist way.
- c It uses phrases that discriminate against people with disabilities.

2 How can stereotypes in movies affect our views of people or cultures? Write down your thoughts.

Example



I think movies that depict certain cultural groups in a stereotypical way can negatively shape our views and limit our understanding of other cultures.

Your Own

B

Read and Talk

Read the text below and answer the following questions.

We may not consciously think that men are naturally “more aggressive” and women are “kinder and nicer.” However, our unconscious biases can cause us to perceive them this way. In one study, the participants were shown pictures of male and female faces and were asked to quickly answer questions about their emotions. The results revealed that men were often perceived as angry, even when their facial expressions were not negative, while women were frequently seen as being happy, even when their facial expressions were neutral. This study provides strong evidence that biases can influence how our brain processes information, causing us to perceive things in ways that confirm those biases.

1 What is the text mainly about?

- a how people have different biases based on their gender
- b how we can educate ourselves to challenge our unconscious biases
- c how we misinterpret what we see because of our unconscious biases

2 Think about how we can challenge unconscious biases. Share your opinion with your partner.

C Answer the Big Question

In this lesson, you have learned about various topics related to the Big Question. Now think about what you've learned and answer the Big Question.



D Check Your Progress

Look through what you've learned in this lesson and reflect on your learning and attitude below.

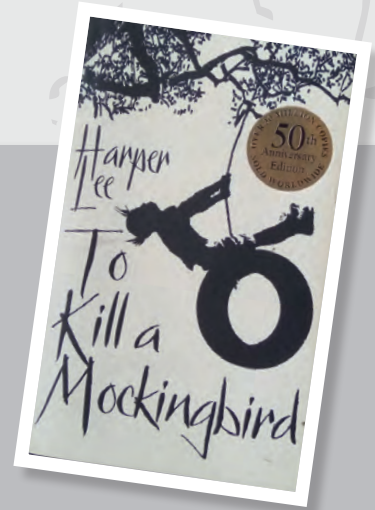
My Learning	
나는 이번 단원에서 배운 내용을 충분히 이해했다.	😊 😐 😞
나는 이번 단원에서 배운 표현과 어휘를 활용하여 말하거나 쓸 수 있다.	😊 😐 😞
나는 이번 단원에서 배운 주제에 대해 나의 생각이나 의견을 표현할 수 있다.	😊 😐 😞
Q. 이번 단원에서 배운 내용 중 가장 중요하다고 생각하는 것은 무엇인가? _____	

My Attitude	
나는 학습 중에 새로운 정보를 잘 이해하고 있는지 스스로 점검했다.	😊 😐 😞
나는 수업에 자발적이고 적극적으로 참여했다.	😊 😐 😞
나는 실수를 두려워하지 않고 나의 생각이나 의견을 자신감 있게 표현했다.	😊 😐 😞
Q. 앞으로 계속 더 발전시켜야 하는 태도는 무엇인가? _____	

Books and Movies

Dealing with Biases

Literature and film reflect our society. They often contain messages about issues and social problems as well. Here are some books and movies dealing with different biases.



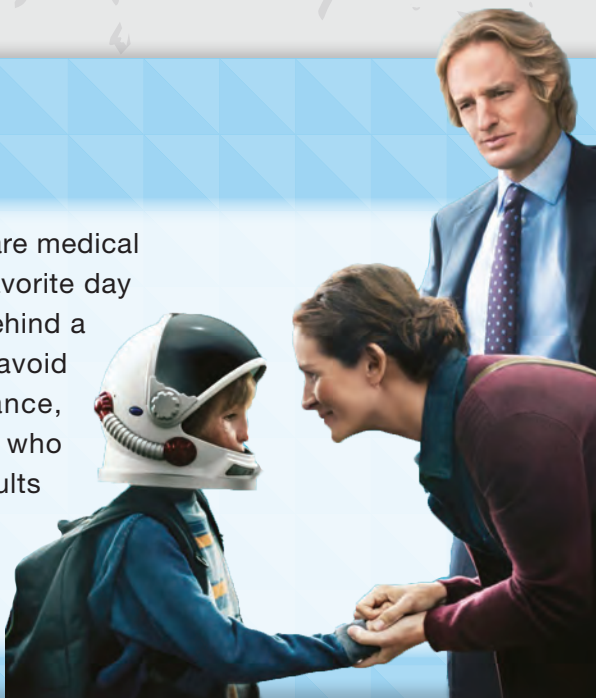
To Kill a Mockingbird

The narrator and main character of the book, Scout Finch, recounts her youth growing up in a racially divided society. The story centers around the trial of Tom Robinson, an innocent black man accused of assault. The lawyer Atticus Finch, the father of Scout, decides to defend Tom. Atticus is a respected local lawyer who values justice and equality. Atticus's fierce defense is not enough to overcome the racism of the time, and Tom is sentenced to death. Despite the tragic result of the trial, Scout learns virtues like courage, morality, and fairness from her father.

Wonder

The movie tells the touching story of a boy, Auggie, with a rare medical condition that has left him with a facial deformity*. Auggie's favorite day of the year is Halloween, when he can hide his appearance behind a mask. He sometimes wears an astronaut helmet outside to avoid being stared at. Instead of complaining about his appearance, Auggie stays positive and tries to make friends with people who accept him as he is. With the help of his friends and the adults around him, Auggie learns to fit in at school and receives an award for being a model student when he graduates.

*deformity 기형



Legally Blonde



The movie follows Elle Woods, a rich and fashionable blond woman who is loved by everyone. After entering Harvard Law School, Elle faces prejudice from her peers and professors, who look down on her due to her appearance. People in the movie think that women with blonde hair are not intelligent. However, she surprises everyone who judged her based on her looks by becoming an intern at a law firm and successfully winning a case. Even though she faces numerous challenges, she stays true to herself, discovers her true potential, and finally proves her worth. The movie promotes the idea of not judging others based solely on their external appearances.



Explore Further

Search for another book or movie dealing with biases or stereotypes. Then share it with your classmates.

The Title of the Book or Movie: _____

What It Is About:

- _____
- _____



Special
Lesson

The Model Millionaire





What might be some possible interpretations of the title “The Model Millionaire?”



Oscar Wilde

Oscar Wilde (1854–1900) was an Irish poet, novelist, and dramatist. He was an influential figure in the late 19th-century art movement known as Aestheticism. His works are characterized by wit, satire, and social commentary, as well as his profound appreciation of beauty.

Works: “The Happy Prince,” “The Devoted Friend,” “The Remarkable Rocket,” etc.



Hughie Erskine was a wonderfully good-looking man, with crisp brown hair, a sculpture-like profile, and grey eyes. He had every accomplishment except that of making money. He lived on two hundred pounds a year that an old aunt gave him. He had tried everything. He had gone to the stock exchange for six months. He had been a tea merchant for a little longer. 5 Ultimately, he became nothing. He was a delightful, incompetent young man with a perfect profile and no profession.

To make matters worse, he was in love. The girl he loved was Laura Merton, the daughter of a retired colonel. Laura loved Hughie, too, and the colonel was very fond of him. However, he would not hear of any engagement. He 10 would say “Come to me, my boy, when you have got ten thousand pounds of your own, and we will talk about it.”



Q1 What was the one thing that Hughie Erskine wasn't good at?

Q2 What do you think the colonel wanted from Hughie before he allowed him to marry Laura?

crisp	profile	stock exchange	merchant	delightful
incompetent	profession	colonel	be fond of	engagement

One morning, Hughie dropped in to see a great friend of his, Alan Trevor. Trevor was a painter. He was a strange, rough fellow with a bushy red beard. However, when he took up the brush, he was a real master, and his pictures were eagerly sought after.

When Hughie came into the studio, he found Trevor putting the finishing touches on a wonderful life-size picture of a beggar. The beggar was standing on a raised platform in a corner of the studio. He was a wrinkly old man with a pitiful expression. He wore a ragged brown cape, and he leaned on a rough stick with one hand while holding out his hat for donations with the other.

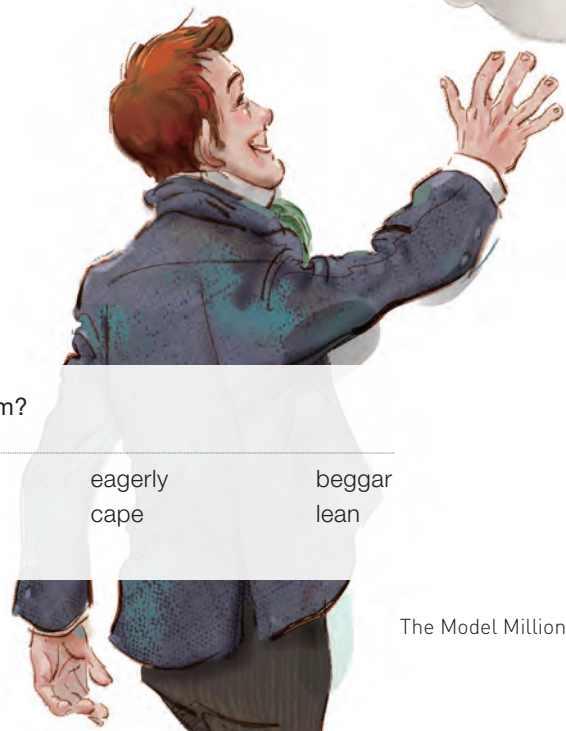
“What an amazing model!” said Hughie, as he shook hands with his friend. “How miserable he looks! How much does the model get for posing?”

“A penny an hour.”

“And how much do you get for your painting, Alan?”

“Oh, I get two thousand pounds for this!”

“Well, I think the model should have a share,” cried Hughie, laughing. “He is working just as hard as you!”



Q3 What was Alan Trevor doing when Hughie visited him?

rough
wrinkly
donation

bushy
pitiful
miserable

beard
ragged

eagerly
cape

beggar
lean

After some time, a servant came in and told Trevor that the frame maker wanted to speak to him.

“Don’t run away, Hughie,” he said as he went out. “I will be back in a moment.”

The old beggar took advantage of Trevor’s absence to rest for a moment ⁵ on a bench that was behind him. He looked so exhausted and miserable that Hughie could not help pitying him. Hughie reached into his pocket to see how much money he had. All he could find was a few coins. “Poor old fellow,” he thought to himself. “He needs money more than I do.” He walked across the studio and slipped a gold coin into the beggar’s hand. ¹⁰

The old man was startled, and a faint smile came across his dry lips. “Thank you, sir,” he said. “Thank you.”

When Trevor returned, Hughie said goodbye and left the studio, blushing a little at what he had done, and he walked home.

Q4 Judging by his act of giving money to the beggar, what kind of person do you think Hughie is?

servant
blush

absence

exhausted

pity

startled



That night, about eleven o'clock, he wandered into a café and found Trevor sitting by himself.

"Well, Alan, did you get the picture finished all right?" he asked.

"Finished and framed, my boy!" answered Trevor. "And, by the way, the old model you saw is quite curious about you. I had to tell him all about 5 you: who you are, where you live, what your income is, and what prospects you have."

"My dear Alan," cried Hughie, "I will probably find him waiting for me when I get home. Poor old man! I wish I could do something for him. I think it is dreadful that anyone should be so miserable. I have piles of old 10 clothes at home. Do you think he would care for any of them? His rags were falling to bits."

"But he looks marvelous in them," said Trevor. "I wouldn't paint him in a fancy coat for anything. I'll tell him about your offer, though. By the way, tell me how Laura is. The old model was quite interested in her." 15

"What? Did you even tell him about her?" asked Hughie.

"Of course! He knows all about the strict colonel, the charming Laura, and the ten thousand pounds."

"You told that old beggar about my private affairs?" cried Hughie, looking very red and irritated. 20

"My dear boy," said Trevor, smiling. "That old beggar, as you call him, is one of the richest men in Europe. He could buy all of London tomorrow with the money in his account."

Q5 What did Hughie consider giving to the beggar?

Q6 Who did the old beggar turn out to be?

wander	income	prospect	pile	care for
marvelous	fancy	strict	charming	private
affair	irritated	account		



“What on earth do you mean?” shouted Hughie.

“The old man you saw today in the studio,” said Trevor, “was Baron* Hausberg. He is a great friend of mine, and he buys all my pictures. He gave me a commission to paint him as a beggar. And I must say he looked
5 magnificent in his rags. Or perhaps I should say in my rags; they are an old suit I got in Spain.”

“Baron Hausberg!” cried Hughie. “Good heavens! I gave him a gold coin!” Hughie sank into the chair in shock.

“A gold coin!” shouted Trevor and burst out laughing.

10 “You should have told me, Alan,” said Hughie. “Now I’ve made a fool of myself.”

*baron 남작

Q7 How did Hughie likely feel after hearing who the beggar was?

shout

commission

magnificent

burst out



“Well, when you came in, I didn’t know whether Hausberg would like his name mentioned. After all, he wasn’t fully dressed.”

“What a fool he must think I am!” said Hughie.

“Not at all. He was in the highest spirits after you left. He kept smiling to himself and rubbing his old, wrinkled hands together. I couldn’t understand why he was so interested to know all about you, but I see it all now.”

Hughie sighed. “The best thing I can do is go to bed,” he said. “And my dear Alan, you mustn’t tell anyone.” Hughie walked home feeling very unhappy.



Q8 What do you think Hausberg was thinking when he received a coin from Hughie?

spirit

rub

sigh

The next morning, as Hughie was at breakfast, a servant brought him a card on which was written “Monsieur* Gustave Naudin, messenger from Baron Hausberg.”

“I suppose he has come for an apology,” said Hughie to himself, and he
5 told the servant to let the visitor in.

An old gentleman with gold spectacles and grey hair came into the room and said, “Do I have the honor of addressing Monsieur Erskine?”

Hughie bowed.

“I have come from Baron Hausberg,” continued the messenger. “The
10 Baron—”

“I beg, sir, that you will offer him my deepest apologies,” stammered Hughie.

“The Baron,” said the old gentleman, with a smile, “has commissioned me to bring you this letter,” and he handed a sealed envelope to Hughie.

15 On the outside was written, “A wedding present to Hughie Erskine and Laura Merton, from an old beggar.” Inside was a check for ten thousand pounds.

*monsieur ~씨, 님 (영어의 Mr. 또는 Sir에 해당하는 프랑스의 경칭)



Q9 What did Hughie think when his servant brought him a card on behalf of the Baron?

spectacles
envelope

honor

bow

stammer

sealed

When Hughie and Laura got married, Alan Trevor was the best man and the Baron made a speech at the wedding breakfast.

 **Source**
www.gutenberg.org
(p. 165 참조)

“Millionaire models,” remarked Alan, “are quite rare. But model millionaires are even rarer.”



 Why do you think Trevor referred to the Baron as a model millionaire?

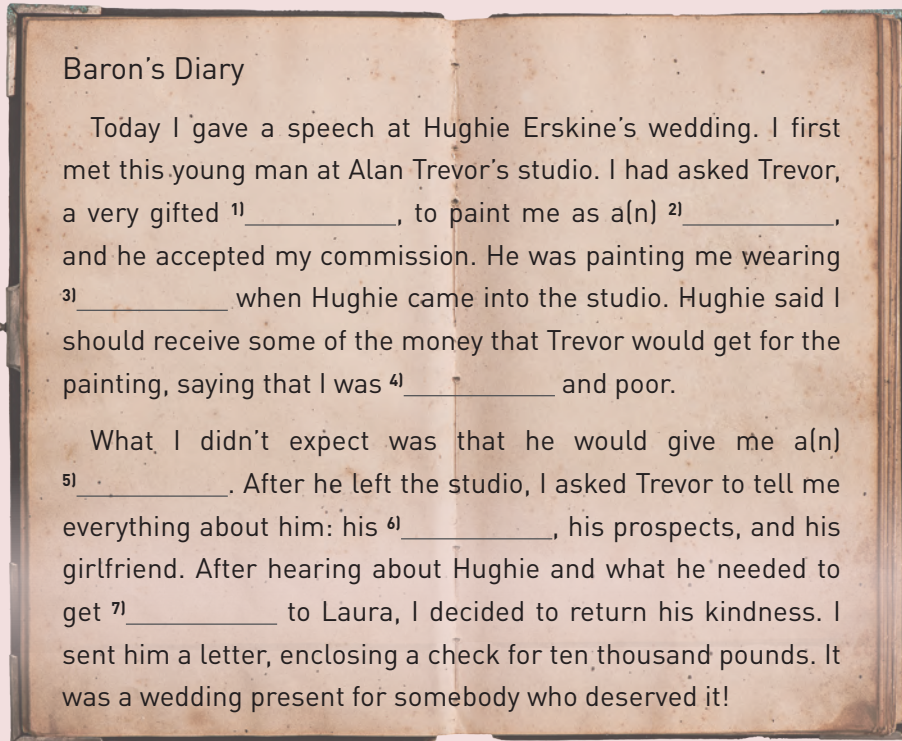
best man

millionaire

rare

After You Read

A Fill in the blanks using the words from the box based on the main text.



B There are many scenes and lines in the main text that give hints about Hughie's personality. Read the story again and find some examples.

C Think about your own answers to the following questions and share them with your partner. 👤👤

Who do you think is the main character of the story, Hughie or the Baron?

I think Baron Hausberg is the main character, as he is the millionaire that the title of this story refers to.

In my opinion, Hughie Erskine is the central character in this story because it was his kindness and generosity that were rewarded in the end.

What lesson did you learn from the story?

I learned that true kindness comes from the heart, not from wealth.

I realized that good things can happen to those who show kindness to others.





Appendix

Answer Keys 152

Transcripts 158

Sources 164

Answer Keys

Lesson 1

Build a Better World

TOPIC 1 Listen & Speak

pp. 10–11

- A** 2 b
B 1 a 2 a

TOPIC 2 In Real Life

pp. 12–13

- A** 1 c
2 1) December 2) 15 3) blind

Before You Read

p. 14

- B** 1) severe 2) persist 3) conducted 4) infectious
5) distribute 6) reward

TOPIC 3 Read

pp. 15–21

- Q1** They visited the homes of sick children to collect samples from them.
Q2 People started to call pertussis “whooping cough” because of the high-pitched “whooping” sound that people with the disease make as they try to breathe in.
Q3 It was because babies who contracted it had a high chance of dying.
Q4 They had each survived whooping cough as children themselves and remembered the severe pain of the disease.
Q5 F
Q6 **Sample** I can infer that they were strongly committed to making a safe vaccine.
Q7 They were able to secure funding for a large-scale trial with the help of First Lady Eleanor Roosevelt.
Q8 3 – 4 – 1 – 2
Q9 **Sample** They must have felt proud that their vaccine had saved many lives from whooping cough.

After You Read

pp. 22–23

- A** 1) whooping cough 2) bacteriologists 3) funding
4) side effects 5) field test 6) vaccinated
7) effectiveness 8) distributed
B 1 T 2 T 3 T 4 F

Focus on Language

pp. 24–25

- A** 1 diversity 2 prosperous 3 flexibility
B 1 need 2 business 3 call

C POINT 1

Practice

- 1 had been prepared
2 had been arrested
3 had been cleaned

Find More

p. 16, L9 The cause of the disease had been identified in 1906, but the vaccines that had been developed were ineffective.

p. 21, L2 However, they replied that it had not been created by them alone, but with the help of many others.

POINT 2

Practice

- 1 himself
2 themselves
3 itself

Find More

p. 17, L7 Personal experience served as motivation for both of them, as they had each survived whooping cough as children themselves and remembered the severe pain of the disease.

p. 19, L8 In 1936, First Lady Eleanor Roosevelt herself visited the laboratory and saw with her own eyes the efforts that Kendrick and Eldering were making in their battle against whooping cough.

TOPIC 4 View & Learn

pp. 26–27

- B** 1 c 2 a

TOPIC 5 Write & Share

pp. 28–29

- A** (A) Personal Information (B) Availability
(C) Volunteer Preferences (D) Relevant Experience

Wrap Up

pp. 30–31

- A** 1 b
B 1 She learned about the importance of animal welfare and the urgent need to find homes for helpless animals.

Lesson 2

The World of Scientific Discovery

TOPIC 1 Listen & Speak

pp. 36–37

- A** 2 F
B 1 c 2 c

TOPIC 2 In Real Life

pp. 38–39

- A** 1 a
2 1) observation 2) birds 3) research

Before You Read

p. 40

- B** 1) accomplishment 2) tremendous 3) launch
4) feature 5) involved 6) phenomenon

TOPIC 3 Read

pp. 41–47

- Q1** **Sample** I agree with the statement because I believe science is about curiosity and exploration. We all constantly ask questions and seek answers in our daily lives, so I think science already belongs to us.
- Q2** He had to classify around one million images of galaxies according to their shape.
- Q3** Lintott suggested that Schawinski turn to the Internet to ask other people for help.
- Q4** **Sample** I think it means to get assistance from a large number of people on a certain task.
- Q5** It was created with a basic design and an easy-to-use interface to allow those who wanted to participate to get started quickly.
- Q6** It helped spread the word about Galaxy Zoo, bringing more and more participants to the website.
- Q7** T
- Q8** They found unusual ribbons of green and purple light. They were similar in appearance to auroras but possessed some notably different features.
- Q9** The name has been kept in honor of the aurora chasers who first discovered the phenomenon.

After You Read

pp. 48–49

- A** 1) classify 2) crowdsourced 3) features
4) Zooniverse 5) aurora 6) photographed
7) experts
- B** 1 F 2 T 3 T 4 F

Focus on Language

pp. 50–51

- A** 1 commitment 2 emergence 3 reference
B 1 unchanged 2 interview 3 unnoticed
C **POINT 1**

Practice

1 was the movie *Elemental* that my friend Sue recommended to me
2 was on Fifth Street that the man crashed into a taxi yesterday

Find More

p. 44, L1 It was online media that helped spread the

word about Galaxy Zoo, bringing more and more participants to the website.

p. 46, L14 Experts have acknowledged that it is the dedicated members of the aurora chasers group that deserve the credit for discovering STEVE.

POINT 2

Practice

- 1 have been seriously injured
2 have lost his life

Find More

p. 44, L5 If it had not been for those participants, Schawinski couldn't have classified that many images.

p. 46, L15 If it had not been for them, it might have remained unnoticed forever.

TOPIC 4 View & Learn

pp. 52–53

- A** 2 1) T 2) F
B 1 c 2 1) warm-hearted 2) intelligent

TOPIC 5 Write & Share

pp. 54–55

- A** (A) Plot of the Movie (B) Acting Performance
(C) Special Effects

Wrap Up

pp. 56–57

- A** 1 a
B 1 He noticed that the seeds had hundreds of tiny hooks that could grip the loops on another surface.

Lesson 3

Life Is a Sum of Choices

TOPIC 1 Listen & Speak

pp. 62–63

- A** 2 a
B 1 c 2 a

TOPIC 2 In Real Life

pp. 64–65

- A** 1 b
2 1) comparing 2) acceptable 3) Switch
4) unimportant

TOPIC 3 Read

pp. 67–73

- Q1** It is because group decision-making involves numerous voices with differing opinions.
Q2 **Sample** Yes. It was when my family had to choose

where to go on vacation. It was difficult to decide because everyone wanted to go to a different place.

- Q3** They decided to try the first-past-the-post (FPTP) method, the alternative vote (AV) method, and the Condorcet method.
- Q4** BAC
- Q5** F
- Q6** The FPTP method is simple, but it is possible to win a vote without the support of the majority.
- Q7** It needs to get more than 50% of the first-preference votes.
- Q8** It is complex and sometimes fails to select a winner.

After You Read

pp. 74–75

- A** 1) first 2) majority 3) second 4) fewest
5) redistributed 6) greater 7) comparing
8) numerous
- B** 1 F 2 F 3 T 4 F

Focus on Language

pp. 76–77

- A** 1 optional 2 effectiveness 3 financial
- B** 1 awareness 2 progress 3 statement
- C** **POINT 1**

Practice

- 1 to keep
2 participating and enjoying
3 to understand

Find More

p. 68, L5 When they asked for advice from Ms. Akers, the council's advisor, she encouraged them not to use the familiar voting method, but to try something different instead.

p. 73, L12 All of these efforts are designed not to make decision-making difficult and inefficient, but to help us make better decisions as a society.

POINT 2

Practice

- 1 Whoever wants to cut down
2 whatever you type

Find More

p. 70, L1 Voters are given several options, and whichever gets the most first-preference votes wins.

p. 73, L9 Whichever we choose will have pros and cons.

TOPIC 4 View & Learn

pp. 78–79

- A** 2 1) recovered 2) change
- B** 1 a 2 b

TOPIC 5 Write & Share

pp. 80–81

- A** (A) Advantages of Option 1
(B) Disadvantages of Option 1
(C) Advantages of Option 2
(D) Disadvantages of Option 2

Wrap Up

pp. 82–83

- A** 1 a
- B** 1 b

Lesson 4

Create a Greener Tomorrow

TOPIC 1 Listen & Speak

pp. 88–89

- A** 2 a
- B** 1 c 2 b

TOPIC 2 In Real Life

pp. 90–91

- A** 1 c
- 2 1) bikes 2) waste 3) temperature

Before You Read

p. 92

- B** 1) hazard 2) discard 3) generate 4) sustainable
5) contribute 6) appliance

TOPIC 3 Read

pp. 93–99

- Q1** **Sample** When my printer broke, I didn't know where to get it fixed, so I just threw it away and bought a new one.
- Q2** discarded, toxic
- Q3** **Sample** In my opinion, it is because people are enthusiastic about buying and owning the latest electronic devices. This leads to the frequent replacement of electronic devices and the disposal of old ones.
- Q4** The legislation states that if you own a product, you have the right to fix it yourself or bring it to a technician of your choice.
- Q5** They are smartphones, laptops, washing machines, televisions, and lawn mowers.
- Q6** It tells consumers how easily the product can be repaired.
- Q7** The index allows consumers to make informed decisions when purchasing new devices and appliances. It also encourages manufacturers to

make their products easier to repair. This leads to fewer electronic and electrical items ending up in landfills.

Q8 fix [repair], volunteer

After You Read

pp. 100–101

- A** 1) discarded 2) technician 3) manufacturers
4) repaired 5) colors 6) advice 7) sharing
B 1 F 2 F 3 F 4 T

Focus on Language

pp. 102–103

- A** 1 entitle 2 supportive 3 encouraged
B 1 need 2 legislation 3 health
C **POINT 1**

Practice

- 1 show
2 apologize
3 attend

Find More

p. 95, L2 For example, a device may be difficult to disassemble, or its manufacturer may require that it be brought to an official service center to be fixed.

p. 95, L19 Finally, it demands that manufacturers design devices in a way that makes repairs as easy as possible.

p. 96, L1 In January 2021, the French government passed a bill that requires that every manufacturer include a “repairability index” on five categories of electronic devices and electrical appliances: smartphones, laptops, washing machines, televisions, and lawn mowers.

POINT 2

Practice

- 1 closed
2 approaching
3 watching

Find More

p. 95, L23 This movement is gaining a growing influence in Europe as well, with more and more countries joining the cause.

p. 97, L4 As a result, with fewer electronic and electrical items ending up in its landfills, France can expect to make a transition to a more sustainable society in the near future.

p. 98, L13 They continue to grow in popularity, with more and more people signing up to volunteer.

TOPIC 4 View & Learn

pp. 104–105

- A** 2 c

- B** 1 b 2 c

TOPIC 5 Write & Share

pp. 106–107

- A** (A) Topic of the Graph (B) Description of the Graph
(C) Findings from the Graph

B Step 1

Sample

1 Topic of the graph
the percentage of electronic waste recycled by region in 2019

2 Description of the graph
(1) Europe had the highest recycling rate at 42.5%.
(2) Asia had the second highest rate at 11.7%.
(3) Africa had the lowest recycling rate at 0.9%.

3 Findings from the graph
Only a small percentage of e-waste was recycled.

Step 2

Sample

The graph above shows the percentage of electronic waste recycled by region in 2019. According to the graph, Europe had the highest recycling rate at 42.5%, which was the only rate above the global average. Asia had the second highest rate at 11.7%, followed by the Americas and Oceania. Africa had the lowest recycling rate at 0.9%. From this graph, we can see that only a small percentage of e-waste—less than 20% globally—was recycled.

Wrap Up

pp. 108–109

- A** 1 a
B 1 It generates large quantities of carbon dioxide.

Lesson 5

Open Your Mind, Defeat Your Biases

TOPIC 1 Listen & Speak

pp. 114–115

- A** 2 F
B 1 b 2 b

TOPIC 2 In Real Life

pp. 116–117

- A** 1 c
2 1) human 2) acceptance

TOPIC 3 Read

pp. 119–125

- Q1** His original reason for developing the lamp was to closely examine the marks left by tools on ancient

Greek and Roman marble sculptures.

- Q2** He discovered clear signs of polychromy.
- Q3** T
- Q4** **Sample** I think they painted their sculptures to add more details to their work. The colors made the sculptures more realistic.
- Q5** Much of the paint with which these sculptures were originally decorated wore off.
- Q6** They associated undecorated white marble with ideal beauty.
- Q7** **Sample** I agree with the statement because white is considered a noble, pure, and beautiful color in many cultures.
- Q8** T
- Q9** It was the development of new methods of scientific analysis and the work of scholars.

After You Read

pp. 126–127

- A** 1) polychromy 2) whiteness 3) colored
4) exhibition 5) Renaissance 6) ignore
1 – 5 – 3 – 6 – 2 – 4
- B** 1 T 2 F 3 F

Focus on Language

pp. 128–129

- A** 1 inconvenient 2 exposure 3 departure
- B** 1 barely 2 movement 3 error
- C** **POINT 1**

Practice

- 1 the news that his novel was published
2 The rumor that the medicine didn't work

Find More

p. 120, L7 Their research showed undeniable evidence that, while white marble was a highly valued material for Greek and Roman sculptors, its smooth surface was not always left bare.

p. 124, L6 The fact that Greek and Roman artists normally decorated their sculptures with vivid colors is now widely acknowledged.

POINT 2

Practice

- 1 I'm afraid that the position for which you applied has already been filled.
- 2 The park has a designated area in which people can set up their tents.

Find More

p. 121, L10 Over a period of more than 1,000 years, much of the paint with which these sculptures were

originally decorated wore off.

p. 121, L14 People of the Renaissance marveled at the smoothness of the white marble and the striking manner in which it enhanced the contrast of light and shadow.

TOPIC 4 View & Learn

pp. 130–131

- A** 2 1) errors 2) untrue
- B** 1 a 2 b

TOPIC 5 Write & Share

pp. 132–133

- A** (A) The Misconception the Person Fought Against
(B) The Result of the Action (C) The Person's Reputation Today

Wrap Up

pp. 134–135

- A** 1 b
- B** 1 c

Special Lesson

The Model Millionaire

Read

pp. 138–148

- Q1** He was not good at making money.
- Q2** **Sample** I think the colonel, Laura's father, wanted to make sure Hughie could take care of his daughter.
- Q3** He was putting the finishing touches on a life-size picture of a beggar.
- Q4** **Sample** I think Hughie is a person with a warm heart who cares about others.
- Q5** He considered giving the beggar some old clothes.
- Q6** He turned out to be one of the richest men in Europe.
- Q7** He must have felt embarrassed about what he had done.
- Q8** **Sample** I think he might have been surprised at first, but he soon wanted to know more about Hughie because he had shown kindness to a beggar.
- Q9** He thought that the Baron sent the messenger to receive an apology from him for having treated the Baron as a beggar.
- Q10** **Sample** I think it was because Trevor thought that the Baron was a good example of a generous person, as he repaid the kindness that he had got from Hughie, even though he didn't have to.

After You Read

p. 149

- A** 1) artist 2) beggar 3) rags 4) miserable 5) coin
6) income 7) married

B **Sample** **p. 142, L7** Hughie reached into his pocket to see how much money he had. All he could find was a few coins. "Poor old fellow," he thought to himself. "He needs money more than I do." He walked across the studio and slipped a gold coin into the beggar's hand.

p. 144, L9 Poor old man! I wish I could do something for him. I think it is dreadful that anyone should be so miserable. I have piles of old clothes at home. Do you think he would care for any of them?

Lesson 1

Build a Better World

TOPIC 1 Listen & Speak

pp. 10–11

A Get Ready

- B:** What did you do last weekend, Hyemi?
- G:** I participated in a “plogging” project on Saturday with my cousins.
- B:** Plogging? What’s that?
- G:** It means picking up trash while jogging.
- B:** You do a lot for your community! I heard that you also volunteer at the local nursing home.
- G:** Yes, that’s right. It feels good to help my community.

B Listen In

- M:** Good afternoon, Westfield High School students! As members of this community, we are supposed to come together and lend a helping hand to others. To encourage this, our school is currently recruiting volunteers to teach online math classes. The classes are designed to help elementary school students who need extra support for their studies. As a volunteer, you’ll teach students math online every Thursday and help them build their confidence. Prior teaching experience is preferred but not required. We provide laptops with video chatting software. If you are interested, please sign up! Registration is open at the school’s volunteer club office until this Friday. Don’t forget to bring your student ID card to sign up. We hope to see many of you participate. Thank you!

TOPIC 2 In Real Life

pp. 12–13

A Listen to the Podcast

- W:** Welcome to the Campbell Community podcast! I’m your host, Melissa.
- M:** And I’m Kevin!
- W:** Today we’ll share some information about a local event happening this Saturday. It is called Walk Together. This event is part of a campaign that aims to raise awareness of and increase support for people with disabilities. Right, Kevin?
- M:** Yes! It’ll take place on December 3, in celebration of the International Day of People with Disabilities. Anyone can participate after paying the \$15

registration fee. The money will be donated to the Campbell Center for People with Disabilities.

W: To participate, you just have to register on the day of the event. When you do, you’ll get a free T-shirt!

M: That’s right! And once the event begins, you’ll start with a 4.2-kilometer walk along the shore of a beautiful lake. After that, you’ll have the chance to play blind football!

W: Please share this information on social media using the hashtag #Walk_Together. We highly recommend attending the event and spending a meaningful Saturday with your family and friends.

M: We’ll be back after a commercial break. Stay tuned!

TOPIC 4 View & Learn

pp. 26–27

B While You View

Video

- W:** CSR stands for “corporate social responsibility.” Many companies are now practicing CSR, but how are they doing it? It can take many forms. For example, one global soft drink brand is putting a big focus on environmental sustainability. It is making its bottles 100% recyclable and promoting the idea of “a world without waste.” It also aims to reduce its carbon emissions by 25% by 2030. Other examples of CSR practices include making donations to charity and sponsoring community events. One of the world’s largest financial groups donates 1.5% of its profits every year to various social service organizations. Also, more than 100,000 of its employees engage with their local community by actively participating in volunteer opportunities. One reason why companies care so much about CSR is that consumers are becoming more concerned with their activities. They are no longer interested only in a company’s products or services; they now tend to carefully examine the company’s values, practices, and impact on society. Consumers are more likely to support businesses that reflect their own values. That way, they can contribute positively to the world with their purchases.

Wrap Up

pp. 30–31

A Listen and Write

- B:** Jina, I saw some pictures of your guitar club’s concert! It looked really fun. Where was it?
- G:** Oh, it was at a nursing home near our school.
- B:** A nursing home?

- G:** Yes, sometimes we go to nursing homes or children's hospitals to perform. I believe our concerts bring joy to people there.
- B:** That's amazing! I want to use my talents to give back to our community too, but I have no idea what I can do.
- G:** You are good at drawing, right? How about coming to the children's hospital with us next Sunday? You can draw portraits for the kids there.
- B:** Oh, that's a good idea! I will ask my friends to join me.
- G:** Great! The more people, the better! The kids will love your drawings. Don't forget to bring your art supplies!

Lesson 2

The World of Scientific Discovery

TOPIC 1 Listen & Speak

pp. 36–37

A Get Ready

- G:** Hey, Jaewoo! What are you doing?
- B:** I'm reading some quotes from scientists about the value of failure.
- G:** Oh, that sounds inspiring. But why are you reading them?
- B:** I was feeling discouraged because I didn't win a prize at the invention contest. But these quotes have encouraged me to try again.
- G:** Good! You should never give up! You'll do better next time!
- B:** Thanks for cheering me up.

B Listen In

- B:** Yumi, you look upset. What's wrong?
- G:** I'm working on an experiment for the science fair. This is the third time I've failed!
- B:** Don't get discouraged! Have you ever heard of the 147/805 rule? It can encourage you to keep trying after you fail.
- G:** I've never heard of it. Can you tell me what it is? I'd be very interested to know.
- B:** Sure. Each number represents the number of times a great scientist failed before making a great scientific achievement. 147 is the number of times Thomas Edison failed before he invented the light bulb.
- G:** Wow! That's a lot!

- B:** Well, don't be too surprised yet. The Wright brothers tried 805 times before they finally had success flying an airplane. In short, inventors have achieved great things after many failures.
- G:** I didn't know those great inventors went through so much trial and error. Now I'm not afraid to try again and again!

TOPIC 2 In Real Life

pp. 38–39

A Listen to the Lecture

- W:** Good morning! I'm Elizabeth Parker, a science professor. Today I want to talk about one of the most fundamental and important skills in the field of science. This particular skill is an ability that we all have. Can you guess what it is? The answer is observation. When we take the time to carefully notice things around us, we can gather information that might point us in the direction of an amazing discovery. Many of the greatest achievements in the world of science began with simple observation. For example, Charles Darwin, the English naturalist and geologist, was able to come up with his theory of evolution after observing the beaks of birds on the Galapagos Islands. Of course, observation is only the first step. After an initial observation, there must be thorough research, followed by repeated testing. Observation is a key component of the long, elaborate process of scientific discovery. Without careful and accurate observation, many important discoveries would never have been made. Scientific research seems to be very complex, but you can start off by polishing your observation skills!

TOPIC 4 View & Learn

pp. 52–53

B While You View

Video

- M:** Dennis Hong is a world-famous robot scientist. He has created many amazing inventions, including different humanoids. His humanoid robots can take over jobs that are too dangerous or that are beyond the capabilities of humans. For example, some of them can put out fires. Others are designed to rescue people from disasters. Hong has also invented a car that can be driven by blind people. As you can see from Hong's creations, he strongly believes that technology should help society be better. He has defined robots as warm-hearted technological inventions and intelligent machines that do things

for humans. To promote robotics education and research, he even designed a special robot called “DARwIn.” DARwIn is a small humanoid robot that can walk and talk. It can even dance and play soccer! Hong made DARwIn’s software available to the public so that more and more people can research and develop robotics technology easily. Although he has already accomplished a great deal, Hong hasn’t stopped inventing. He is still working on developing robots and technologies that can improve people’s lives.

Wrap Up

pp. 56–57

A Listen and Discuss

- B:** Rayla, did you take this picture? It’s really nice!
- G:** Thanks! I sometimes go to the park to observe birds. I hadn’t seen that kind of bird before, so I took a picture of it.
- B:** Hmm... I think you should share this picture with the eBird project.
- G:** What is the eBird project?
- B:** It’s an online citizen science project in which participants report their bird observations.
- G:** I don’t know much about science, though. Can I still participate?
- B:** Absolutely. People from all over the world provide their data, and it’s used to create maps of bird distribution and track bird migration patterns. In short, this project contributes to the study of birds.
- G:** That sounds so rewarding! Let’s go to the park together tomorrow and observe some birds! We might find some rare ones!
- B:** Sure! I will bring my camera. Don’t forget to wear warm clothes!

Lesson 3

Life Is a Sum of Choices

TOPIC 1 Listen & Speak

pp. 62–63

A Get Ready

- G:** Inwoo, have you decided what to eat?
- B:** No, I haven’t. There are so many dishes. I always have a hard time making a decision when there are too many options.
- G:** Yeah, I know what you mean. I tried the chicken

salad here before, and it was good. Why don’t you give it a try?

- B:** Well, I’m starving, so I don’t think salad would be enough. I will ask the server if he has a recommendation.

B Listen In

- G:** Timothy, what’s wrong? You look worried.
- B:** Well, my favorite singer is going to have a concert tomorrow.
- G:** Oh, right. You’ve been looking forward to it. So what’s the matter? Aren’t you excited?
- B:** The thing is, I have a big exam at the end of this week. So I’m not quite certain whether it would be a wise choice to go to the concert. I was thinking about canceling the ticket and just studying at home.
- G:** If I were you, I would go to the concert and enjoy it.
- B:** Really? Can you tell me why?
- G:** It’s just a couple of hours. After you relieve your stress at the concert, you’ll be able to focus better.
- B:** Hmm... I’m still not sure.
- G:** I know you have been studying hard for the exam. Don’t worry and go have fun!
- B:** _____

TOPIC 2 In Real Life

pp. 64–65

A Listen to the Interview

- W:** Now, let’s take some time to talk about choices. Professor Hawthorne, how can we learn to make confident decisions in situations where we are presented with multiple options?
- M:** In situations like that, we often become anxious or stressed about making the “best” choice. But it becomes easier when we realize there are two types of decision-makers.
- W:** That’s interesting. What are the two types?
- M:** The first type of people are maximizers. They spend a lot of time and energy comparing all the possible options to make the best choice. The second type of people are satisficers. They simply choose the first thing that seems acceptable. The secret to being a good decision-maker is to switch between these two types, depending on the situation.
- W:** Can you give me some examples?
- M:** You can be a satisficer when making an unimportant decision, like which flavor of ice cream to eat or what color shirt to buy. But for a more important

decision, like selecting a major or choosing a career, you should be a maximizer.

W: I think we've gained some fascinating insight into decision-making from you today!

TOPIC 4 View & Learn

pp. 78–79

B While You View

Video

M: The Concorde was the first commercial airplane that could travel faster than the speed of sound. It could fly from Paris to New York in half the time of other planes. The Concorde was a technological marvel, but today it is nowhere to be seen. What happened? In fact, the Concorde's failure was inevitable from the start. Its production costs were excessive, and it consumed a lot of fuel. Also, it was able to carry only a small number of passengers. In other words, it was never a profitable airplane. Despite these problems, large sums of money continued to be invested in the Concorde. The governments and airline companies funding it were reluctant to admit that it was a failure. They were worried about wasting the money and other resources that they had already spent on it. Eventually, after many years of huge losses, the Concorde made its last flight in 2003. The decision to keep operating the Concorde was the result of the "sunk cost fallacy." Why do people fall for the sunk cost fallacy? Perhaps it's the human instinct to avoid losses. However, sunk costs are costs that you'll never get back, regardless of what decisions you make in the future. If you realize your past decision was a mistake, accept the fact and move on. Don't let sunk costs affect your decisions.

Wrap Up

pp. 82–83

A Listen and Write

W: Hey, Eric, what are you up to?

M: I'm trying to pick a hotel for my winter vacation. I'm checking travel websites and reading through reviews.

W: Let me see. Oh, this one has good reviews. If I were you, I would definitely consider this one.

M: Yes, it has excellent facilities, but it is located a bit far from the main street.

W: Ah, that might be inconvenient. How about this one? The review says it is in a great location for visiting tourist attractions.

M: Yes, but it's an old building, and the rooms look

small.

W: Wow, you have carefully compared all these options.

M: Well, choosing the right accommodation for my vacation matters a lot to me. All hotels have different pros and cons. I'm not quite certain which would be the best choice.

W: You should try making a list of your top priorities for a hotel. That might help you narrow down the options.

M: That's a great idea!

Lesson 4

Create a Greener Tomorrow

TOPIC 1 Listen & Speak

pp. 88–89

A Get Ready

B: Look at all these stylish shoes! They're on sale, and they're really cheap! I'm going to get a pair.

G: Do you really need more shoes? I know you already have at least five pairs at home.

B: Well, I could just throw away some old ones if I buy new ones!

G: You shouldn't buy things that you don't really need. Remember that our unnecessary purchases can accelerate environmental pollution.

B: I guess you are right. I will be more cautious from now on.

B Listen In

G: Dad, we don't have any shampoo at home. Let's buy this brand. I saw it advertised on TV.

M: I think it's better for the environment to buy one with this logo on it!

G: What do you mean by that? What does this logo have to do with the environment?

M: It indicates that the product is guaranteed not to contain microplastics.

G: Oh, I read an article about the negative impact of microplastics on the environment. They are especially harmful to marine habitats because they eventually end up in places like rivers, lakes, and oceans.

M: That's why we should consider purchasing products with this logo. It can encourage more companies to think about how they develop their products.

G: I never thought about it that way. From now on, I

will be more conscious about what I buy.

M: Great! Why don't you check out other products with this logo?

TOPIC 2 In Real Life

pp. 90–91

A Listen to the Presentation

M: Hello, I'm Professor Noah Williams, and it's a great honor to be here as a key speaker. With environmental pollution getting worse, sustainable cities are being suggested as a solution to the problem. Today, we will take a look at Copenhagen, one of the greenest cities in the world. Copenhagen, the capital of Denmark, has achieved a remarkable harmony between urban development and environmental conservation. About 62% of its citizens ride bikes to get around the city. Copenhagen has 546 kilometers of bike paths and bridges that allow people to go anywhere in the city by bike. Plus, renewable energy is being generated in a unique power plant called CopenHill. Each year, it converts 440,000 tons of waste into energy that can provide electricity and heating for 150,000 homes. Furthermore, Copenhagen's buildings are covered with green roofs, where grass and trees are planted. These green roofs improve the air quality of the city and reduce its temperature. Let's take a closer look at this remarkable city!

TOPIC 4 View & Learn

pp. 104–105

B While You View

Video

W: The Dutch city of Rotterdam is home to a very special place called a floating farm. As its name suggests, it's a dairy farm that floats on the water of Rotterdam's harbor. Due to the climate crisis, the amount of fertile land that is suitable for farming continues to decline. However, floating farms are helping to revolutionize our approach to agriculture by producing fresh food on the water. Rotterdam's floating farm has three layers. The top layer is where the cows live and the milk is produced. The middle layer is used for processing the milk. The bottom layer is located beneath the water. It is where dairy products like cheese are stored at cool temperatures. Interestingly, the farm is operated in a self-sufficient way. All of the electricity that it needs is provided by solar panels floating next to it. Also, all of the water that the cows drink comes from rainwater that

is collected, filtered, and purified. With a floating farm in the heart of the city, food can be produced where it is consumed. This means that the amount of carbon dioxide produced in the transportation of food is significantly reduced. Considering all of the advantages, it's clear that floating farms are a sustainable alternative to conventional agriculture.

Wrap Up

pp. 108–109

A Listen and Search

G: Hi, Sean! What is in that paper bag?

B: It's full of empty plastic bottles from cosmetics products.

G: Oh, are you on your way to throw them away?

B: No. Actually, I am taking them back to the store where I bought the products.

G: To the store? What do you mean?

B: Well, this brand collects the empty bottles from consumers and recycles them.

G: Wow, that's amazing! Is it the only brand with this kind of recycling program?

B: No. There are several other cosmetics companies that have started similar projects to reduce waste and promote sustainability.

G: It's great to see cosmetics companies making an effort to create a greener future.

B: I agree. Why don't you check if you have some bottles to recycle when you get home?

G: I will. Thanks for the useful information!

Lesson 5

Open Your Mind, Defeat Your Biases

TOPIC 1 Listen & Speak

pp. 114–115

A Get Ready

G: How was your weekend, Ben?

B: It was great! I went to a baseball game with my grandma.

G: Oh, that's nice! Did you both have a good time?

B: Yes. I was really surprised by how much she got into the game. I didn't think older people liked watching sports.

G: It's a common assumption, isn't it? We often think they might prefer quieter activities, but they can surprise us with their diverse interests.

B Listen In

- B:** Hey, did you read this article about a blind pianist? He won the Pianist of the Year award yesterday.
- G:** Yes, that was amazing! He overcame his physical disability and achieved success!
- B:** Well, I agree that he is amazing, but “overcame his disability” is a biased expression. We should not use that phrase.
- G:** What do you mean? That phrase is quite common. It’s even used in this article.
- B:** Yes, but it seems to me that it reinforces biases against people with disabilities.
- G:** Oh, I understand your point now. So, using that phrase could suggest that a disability is just something to be overcome.
- B:** Exactly! There are many expressions that might contain biases or stereotypes we aren’t aware of.
- G:** Why don’t we write an email to the journalist who wrote this article and suggest not using that phrase anymore?
- B:** That’s a great idea! Let’s do it!

TOPIC 2 In Real Life

pp. 116–117

A Listen to the Radio Broadcast

- M:** Good afternoon, listeners, and welcome to *Culture Corner*. Today I want to introduce an unusual library that started in Denmark. It’s called the Human Library. So, what makes it special? This library is aiming to challenge stereotypes and bring people together. Here’s how it works. People go into the library and “borrow” a human being, much like they would borrow a library book. They then engage in conversations with the “borrowed” person and get to know them better. Each human “book” may be a different race or religion, or perhaps they have a disability. They also represent various minority groups that often face prejudice, discrimination, or even hate. The library allows people to discover more about them as human beings, and this usually brings acceptance and understanding. Today, the Human Library operates in more than 80 countries. I encourage you to look it up and find out if it’s active in your area.

TOPIC 4 View & Learn

pp. 130–131

B While You View

Video

- W:** This is a story that happened during World War II. The U.S. Air Force was trying to figure out how to better protect their fighter planes from enemy attacks. A research team led by statistician Abraham Wald examined the planes that had returned from missions. The group’s initial idea was to determine which parts of the planes had been damaged the most and reinforce those parts. However, Wald soon realized that something was wrong with this approach. They were examining only the planes that had survived. This meant that the damage that these planes received was not fatal. They were totally overlooking the planes that couldn’t return to the base. Wald realized the undamaged parts of the surviving planes were actually the crucial ones. He suggested reinforcing these areas and as a result, the lives of many pilots were saved. Wald later coined the phrase “survivorship bias” for the type of mistaken thinking that the team initially fell into. We can learn an important lesson from this story. We need to consider what is missing in our analysis in order to make better decisions. By doing so, we can avoid falling into the trap of survivorship bias.

Wrap Up

pp. 134–135

A Listen and Write

- B:** I watched a film called *The Aristocats* yesterday with my sister. I was surprised when the film started.
- G:** Isn’t that an old animated film for children? What happened?
- B:** At the beginning of the film, there was a content warning.
- G:** A content warning? What did it say?
- B:** It said “This film includes negative depictions of people and cultures. These stereotypes were wrong then and are wrong now.”
- G:** What kind of stereotypes were in the film? I haven’t seen it.
- B:** Well, a cat in the film is depicted in a racist way that mocks Asian people. It speaks English poorly with a strong accent.
- G:** That’s definitely harmful. It just reinforces negative stereotypes.
- B:** Yes. But judging from the content warning, it seems to me that the film industry is learning from its past mistakes.
- G:** Oh, that’s a relief!

Read

Text

Lesson 1

Adapted from

- <https://www.smithsonianmag.com/science-nature/unsung-heroes-ended-deadly-plague-180979547/>
- <https://www.ggrwhc.org/projects/dr-pearl-kendrick-and-dr-grace-eldering/>
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Lesson 2

Adapted from

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Lesson 3

Adapted from

- <https://plus.maths.org/content/which-voting-system-best>
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Lesson 4

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Adapted from

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Special Lesson

Adapted from

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View & Learn

Lesson 1

Adapted from

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Lesson 2

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Lesson 3

Adapted from

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Lesson 4

Adapted from

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Lesson 5

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- <https://thedecisionlab.com/biases/survivorship-bias>
- <https://www.cantorsparadise.com/survivorship-bias-and-the-mathematician-who-helped-win-wwii-356b174defa6>

* 집필진의 직접 집필인 경우 출처를 밝히지 않았음.

Graphs

p. 20

Adapted from

- <https://www.cdc.gov/pertussis/surv-reporting.html>

p. 106

Adapted from

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p. 107

Adapted from

- <https://theroundup.org/global-e-waste-statistics/>

Photos

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<https://www.shutterstock.com/>

<https://www.istockphoto.com/>

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- p. 84 • <https://www.nasa.gov/missions/station/how-nasa-transmits-votes-from-the-space-station/>
- p. 86, p. 87 • <https://unsplash.com/ko/%EC%82%AC%EC%A7%84/%ED%91%B8%EB%A5%B8-%EC%9E%94%EB%94%94-%ED%95%84%EB%93%9C%EC%9D%98-%EA%B3%B5%EC%A4%91%EB%B3%B4%EA%B8%B0-1RllmivtNhw>
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- p. 137 • http://www.impawards.com/2017/wonder_ver14.html
- p. 139 • https://commons.wikimedia.org/wiki/File:Oscar_Wilde_by_Sarony_1882_22.jpg

* 출처를 밝히지 않은 사진, 삽화, 영상은 저작자 및 발행사에서 저작권을 가지고 있는 경우임.

Lesson 1

- p. 10 <https://ne2.us/fLHzwm>
- p. 12 <https://ne2.us/wYuI1Z>
- p. 15 <https://ne2.us/ipjjHu>
- p. 26 <https://ne2.us/e57wv2>
- p. 30 <https://ne2.us/5Npyir>

Lesson 2

- p. 36 <https://ne2.us/JwsZ9o>
- p. 38 <https://ne2.us/nsDx6S>
- p. 41 <https://ne2.us/mpygKX>
- p. 52 <https://ne2.us/neHBsd>
- p. 56 <https://ne2.us/dTCBzh>

Lesson 3

- p. 62 <https://ne2.us/A7u5WI>
- p. 64 <https://ne2.us/DI2KIK>
- p. 67 <https://ne2.us/4VFH8Z>
- p. 78 <https://ne2.us/2Wk2Si>
- p. 82 <https://ne2.us/YJiusI>

Lesson 4

- p. 88 <https://ne2.us/v2UekA>
- p. 90 <https://ne2.us/SjxbNp>
- p. 93 <https://ne2.us/fA3iSw>
- p. 104 <https://ne2.us/TDxjY5>
- p. 108 <https://ne2.us/AwjPyU>

Lesson 5

- p. 114 <https://ne2.us/ERYt2U>
- p. 116 <https://ne2.us/R4Ig2M>
- p. 119 <https://ne2.us/2MVZ5r>
- p. 130 <https://ne2.us/t21Ge4>
- p. 134 <https://ne2.us/oSjD1D>

Special Lesson

- p. 140 <https://ne2.us/2S34Kd>

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김진홍

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김지현, 신유승, 김은정, 이은비, 박영아

디자인

오영숙, 안훈정, 조기영, 오솔길

삽화

박응식, 송재우, 이법섭, 이지혜

교육부의 위탁을 받아 한국교육과정평가원이 검정 심사를 하였음.

High School English II

2025. 3. 1. 초판 발행

정가

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인쇄인 대원아트팩㈜ (경기도 파주시 경의로 1240번길 15, 802호)

ISBN 979-11-253-4876-4

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공급 업무 대행 (10881) 경기도 파주시 문발로 439-1(신촌동 734-1) 사단법인 한국교과서협회

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