

READING¹ EXPLORER

THIRD EDITION

TEACHER'S BOOK

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**Reading Explorer Teacher's Book 1
Third Edition**

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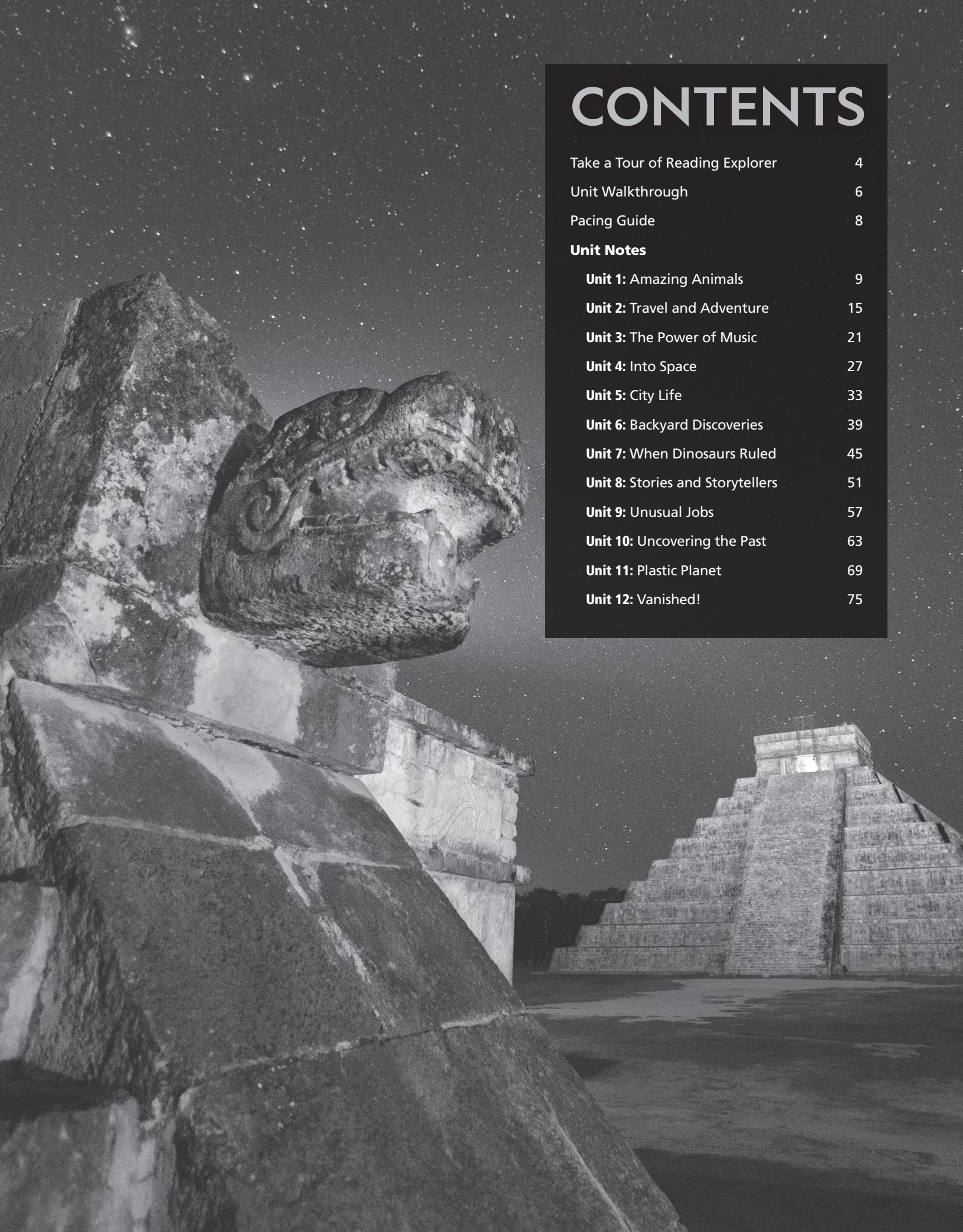
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The background of the entire page is a black and white photograph of ancient Mayan ruins. In the foreground on the left, a large, weathered stone head sculpture is visible, part of a larger structure. In the background on the right, a large, stepped pyramid (El Castillo) is illuminated from below, standing against a dark sky filled with stars.

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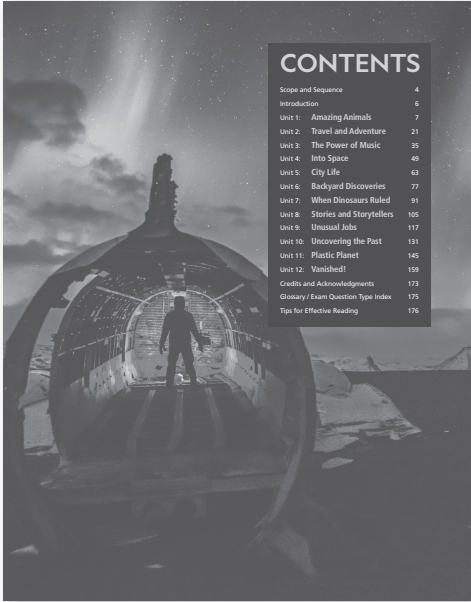
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TAKE A TOUR OF READING EXPLORER

Thank you for choosing to use *Reading Explorer* 3rd Edition Level 1.
Here are 7 steps to help you get familiar with the course:

- 1 First, look at the list of **Contents** on page 3 of the Student's Book. You'll see the book is organized into 12 units. The book can be used for a short course of 24–36 hours using just the core units or can be extended for longer courses, for example, by using the **Video** activities in class. **Split editions** are also available for shorter courses.
- 2 Look at the **Scope and Sequence** on pages 4–5 of the Student's Book. You'll see that each unit is based on a theme of general interest, for example, "Amazing Animals." Within each unit are two lessons, each based around a reading passage. Each lesson covers a range of reading skills and vocabulary building activities. An **introduction** on page 6 of the Student's Book highlights the new features of the Third Edition.
- 3 Skim through a **Unit** of the Student's Book and compare it against the Unit Walkthrough on the following pages of this Teacher's Book. The Teacher's Book also provides teaching suggestions and background notes for each unit.

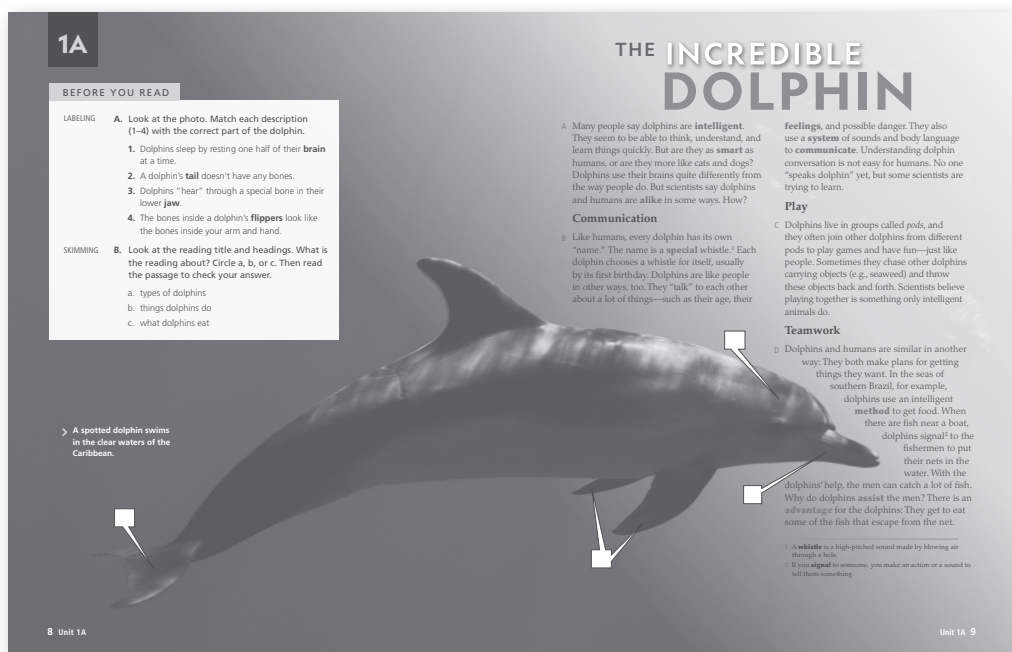


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SCOPE AND SEQUENCE

UNIT	THEME	READING	VIDEO
1	Amazing Animals	A: The Incredible Dolphin B: Master of Disguise	A Chameleon's Colors
2	Travel and Adventure	A: The Trip of a Lifetime B: Adventure Islands	Exploring Laponia
3	The Power of Music	A: Move to the Music B: A Musical Boost	The Mozart Effect
4	Into Space	A: Life Beyond Earth? B: Living in Space	The Red Planet
5	City Life	A: Global Cities B: A Taste of Two Cities	New York Skyscraper
6	Backyard Discoveries	A: In One Cubic Foot B: What's in Your Neighborhood?	BioBlitz
7	When Dinosaurs Ruled	A: The Truth about Dinosaurs B: Mystery of the Terrible Hand	Dinosaurs: A Brief History
8	Stories and Storytellers	A: The Brothers Grimm B: The Seven Ravens	Fairy-tale Castle
9	Unusual Jobs	A: Meet the Meteorite Hunter B: Smokejumpers	Snake Catchers
10	Uncovering the Past	A: The Army's True Colors B: Wonders of Egypt	City in the Clouds
11	Plastic Planet	A: The Problem with Plastic B: Five Tips for Using Less Plastic	Our Plastic World
12	Vanished!	A: Mystery on the Mountain B: The Missing Pilot	Earhart Mystery

ACADEMIC SKILLS		
READING SKILL	VOCABULARY BUILDING	CRITICAL THINKING
A: Skimming for Gist B: Identifying Main Ideas in Paragraphs	A: Suffixes -ance and -ence B: Word forms of survive	A: Identifying Ideas B: Comparing, Reflecting
A: Understanding Maps B: Scanning for Key Details	A: Words acting as nouns and verbs B: Collocations with original	A: Interpreting Visual Information B: Reflecting
A: Identifying Supporting Details B: Identifying Supporting Reasons (1)	A: Collocations with control B: Suffix -ion	A: Reflecting B: Relating to Personal Experience; Evaluating Methods
A: Summarizing: Using a Concept Map B: Identifying Supporting Reasons (2)	A: Suffix -ful B: Collocations with environment	A: Speculating B: Reflecting; Ranking Tasks
A: Understanding Charts and Graphs B: Summarizing: Using a T-chart (1)	A: Prefix inter- B: Suffix -ation	A: Ranking Cities B: Relating; Evaluating Pros and Cons
A: Understanding Sequence (1)—Processes B: Understanding Sequence (2)—Instructions or Directions	A: Phrasal verbs with break B: Collocations with take	A: Applying Ideas B: Analyzing Information; Applying Ideas
A: Identifying Supporting Examples B: Finding Meaning (1)—Using Definitions	A: Suffixes -er and -or B: Collocations with opinion	A: Analyzing Theories B: Speculating; Reflecting
A: Annotating Text (1) B: Understanding Pronoun Reference	A: Suffix -al B: Word usage: affect vs. effect	A: Analyzing Stories B: Applying Ideas; Making Predictions
A: Identifying Exact vs. Approximate Numbers B: Annotating Text (2)	A: Collocations with treasure B: Suffix -ment	A: Justifying an Opinion B: Ranking/Speculating; Reflecting
A: Finding Meaning (2)—Identifying Homonyms B: Creating an Outline Summary	A: Collocations with reveal B: Collocations with task	A: Evaluating Pros and Cons B: Analyzing Evidence; Justifying an Opinion
A: Understanding a Writer's Use of Quotes B: Finding Meaning (3)—Using Context	A: Prefix ex- B: Collocations with global	A: Inferring Effects B: Ranking Suggestions; Applying Ideas
A: Summarizing: Using a T-chart (2) B: Recognizing Degrees of Certainty	A: Suffix -ever B: Prefix dis-	A: Evaluating Evidence B: Evaluating Theories; Reflecting



4 Turn to one of the **Reading Passages** (e.g., Student's Book 1 page 9). The passages are adapted from authentic National Geographic sources, which are listed in the Credits at the back of the Student's Book. Each passage is also available as an audio recording in the **Classroom Audio CD/DVD Package** and on the **Classroom Presentation Tool**, providing a useful model for pronunciation. Useful, high-frequency words, aligned with the CEFR, are highlighted in each reading passage.

5 Check out the **Video clips** on the **Classroom Audio CD/DVD Package**. The clips can be used with the **Video** section at the end of each Student's Book unit, and also with the video comprehension activities in the **Online Workbook**.

6 The following **support components** are available for each level of the series:

- **Online Workbook** featuring the 12 video clips from the Student's Book and a variety of interactive, self-grading activities.
- **Classroom Presentation Tool** with answer keys for the Student's Book activities and extra practice questions for target vocabulary.
- **Student's eBook** as a digital version of the Student's Book.
- An **Assessment Suite** containing ExamView® question banks is available for teachers who want to create customized tests or give students additional language practice.

7 A **Website** is also available at ELTNGL.com/readingexplorerseries. It contains audio recordings of the 24 reading passages, 12 video clips from each unit, video scripts of each video, a list of key vocabulary for that particular level, class worksheets, graphic organizers, ExamView® question banks, and the Teacher's Book.

INSTRUCTIONS ▲

Watch the video. Complete the summary.

communicate take care of behavior smaller extinct large

As most people are aware, the lion is a _____ cat. Lions can weigh several hundred pounds and grow to be over 10 feet long. But lions have many other interesting qualities.

For one thing, a lion's roar is very loud. Lions roar for different reasons; for example, to _____ with other lions and to keep other lions away from their territory. Another aspect of lion _____ is that they live in groups called prides. Prides usually consist of one male and several females. Prides work together to find food and _____ their offspring.

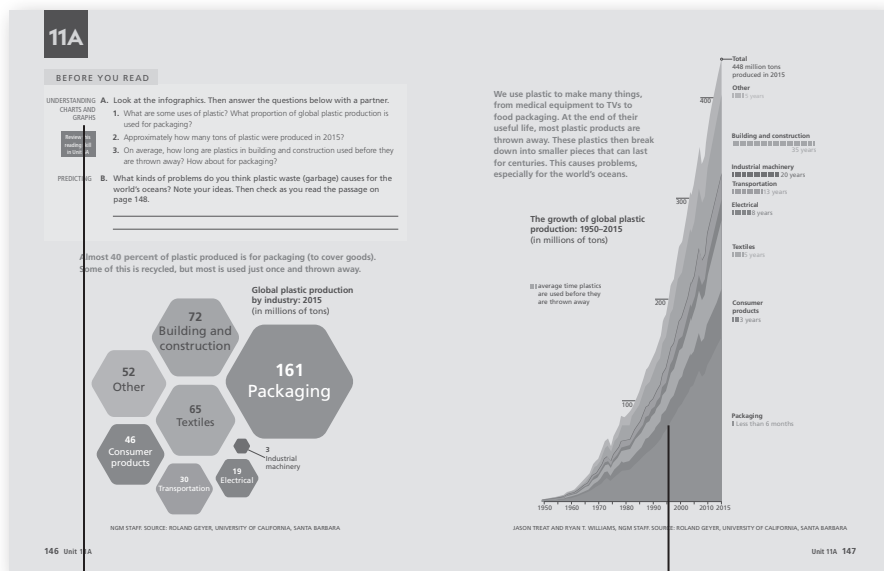
In the past, there were several lion species, but today, most are _____. Only two types remain, the African lion and the Asiatic lion. Sadly, today's lion population is getting _____ due to a combination of illness, hunting, and human impact on their habitats.

Show Answers Submit

UNIT WALKTHROUGH



Warm Up discussion questions raise learners' interest in the unit theme and activate prior knowledge.



Before You Read tasks introduce key terms that learners will encounter in the reading passage, and develop previewing skills such as skimming and making predictions.

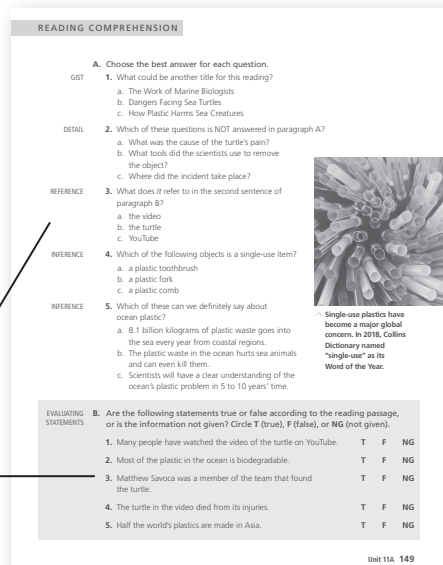
Infographics, maps, and charts support the reading passages and develop learners' visual literacy.



Each **Reading Passage** is adapted from an authentic National Geographic source. **Target vocabulary** is carefully selected in line with CEFR leveling.

Reading Comprehension activities include various types of multiple choice questions (e.g., main idea, detail, reference).

This section also features **exam-style question types** commonly encountered in standardized tests such as IELTS and TOEFL®. An index of question types is at the back of the Student's Book.



READING SKILL

Understanding a Writer's Use of Quotes

A writer may choose to include the exact words from a source. These are set off by quotation marks (" "). Quotes can be used for various reasons, such as the following:

- To add a supporting statement or question:
Locals aren't waiting for the government to solve the plastic problem. "It's important for us to start cleaning up the oceans ourselves," said one resident.
- To provide expert evidence for an argument:
The plastic in our oceans will not go away by itself. "We use plastic dating back to the 1960s and 1970s," says Boyan Slat, CEO of the nonprofit group Ocean Cleanup.
- To highlight an interesting or memorable phrase:
"Ghost nets" are fishing nets (usually made of plastic) that have been left or lost in the ocean. Every year, they trap and kill millions of sea animals.

SCANNING A. Look back at Reading A. Underline the quotes. Discuss with a partner: Why did the writer include them?

IDENTIFYING PURPOSE B. Match each of these quotes (1-4) with its purpose. Write a, b, or c. One option is used twice.

- The problem of plastics in our oceans is bigger than most people realize. "What's floating on the surface ... is only 3 percent of the plastics that enter the ocean every single year," says Eben Schwartz from the California Coastal Commission.
- It's important that everyone uses less plastic. "My class recently decided to stop using plastic straws," says 12-year-old Molly Peterson.
- The Great Pacific Garbage Patch is a collection of floating trash that covers a huge area of the North Pacific Ocean. However, it's more "plastic soup" than trash.
- Ocean plastic is a big problem for people who rely on fish and seafood for their diets. "How can we be sure that the fish we catch or buy is safe to eat?" asks local resident Mayumi Fujikawa.

CRITICAL THINKING: Inferring Effects Reading A looks at how plastic in the ocean affects sea animals. In what ways does this ocean plastic affect humans? Discuss with a partner and note your ideas.

150 Unit 11A

Reading Skill sections provide learners with the tools they need to become effective and critical readers. Core reading skills are recycled and reinforced throughout the book.

Critical Thinking sections challenge learners to analyze, evaluate, and reflect on what they've read, and form their own opinions.

VOCABULARY PRACTICE

COMPLETION A. Complete the paragraph with words from the box.

common huge recycle rescue

The Owl _____ Centre is a nonprofit organization in South Africa that is dedicated to the protection of owls. It has also been doing incredible work for the environment. In 2018, the center started a project to collect used plastic bottles and _____ them into owl houses. Plastic bottles are an increasingly _____ sight in our rivers and oceans. By reusing these plastic bottles, the center can build more nesting boxes for owls and also ensure that less plastic ends up in the ocean. The project has been a _____ success, and the center is now raising money to buy a ship that will collect plastic directly from the ocean.

WORDS IN CONTEXT B. Complete the sentences. Circle the correct words.

- If you **extract** something, you **buy it / take it out**.
- You use **typically** to refer to what **usually happens / once happened** in a situation.
- If someone is **weak**, they are not very **strong / intelligent**.
- Something that is **confusing** is **easy / difficult** for people to understand.
- You use **constant** to describe something that happens **some of / all** the time.
- Something that happens over the **long** term will happen **very soon / continue** far into the future.

WORD PARTS C. The prefix **ex-** means "out" or "out of" (e.g., **extract**). Complete the sentences using the words in the box. One word is extra.

except exit extend extract

- "Ghost nets" are a serious problem along Australia's northern coastline; they can _____ for more than several hundred meters in length.
- The store is open every day _____ Sunday.
- Boyan Slat's foundation, Ocean Cleanup, is developing various technologies that can _____ plastic waste from our oceans.

Unit 11A 151

Vocabulary Practice sections focus on the target vocabulary items from the reading passage.

This section also provides **expanded vocabulary practice** focusing on collocations, word usage, and word families.

11B BEFORE YOU READ

DISCUSSION A. Read the caption below and look at the photo. What plastic items do you see in this photo? Are any of them single-use items? Discuss with a partner.

PREDICTING B. How can you use less plastic in your day-to-day life? Note some ideas. Then read the passage and check if any of your ideas are mentioned.

Plastic garbage collected from a beach in North East England, U.K.

152 Unit 11B

A **second reading** in each unit expands learners' knowledge of the unit theme and further builds vocabulary. Reading B is also followed by Reading Comprehension, Reading Skill, and Vocabulary Practice sections.

contrast, the average Dane uses four single-use bags per year. In 1993, Denmark was the first country to place a **tax** on plastic bags. Today, other countries (such as Chile, Kenya, Indonesia, Germany, and New Zealand) either make **customers** pay for plastic bags, or have **banned** them completely.

2. **Skip the straw.** Today, around 8.3 billion plastic straws **pollute** the world's beaches. So when you order a drink, say **no** to the straw, or bring your own reusable one. In 2018, Seattle became the first major U.S. city to ban plastic straws, and many other cities are set to follow its example.

3. **Don't use plastic bottles.** Buy a reusable bottle and fill it with any type of beverage you like. Some cities, like Bundanoon in Australia and San Francisco in the U.S., have completely or partially banned bottled water. **Globally**, however, people still buy nearly a million plastic bottles every minute.

4. **Avoid plastic packaging.** Buy bar soap instead of liquid soap in plastic containers. Don't buy fruit or vegetables in plastic packaging. In the United Kingdom, leaders are calling for supermarkets to have plastic-free areas. They also want to tax plastic take-out containers.

5. **Recycle.** We can't recycle all plastic items, but it is possible to recycle most bottles and milk or juice cartons. Today, Norway recycles 97 percent of its plastic bottles. How? Machines at most supermarkets take the bottles and give a **refund** of up to 2.5 kroner (32 cents) per bottle.

1 **1 billion** = 1,000,000,000 or 1,000 million
2 If you **call** for something to happen, you make a strong request for it to happen.

Unit 11B 153

VIDEO

OUR PLASTIC WORLD

> Streetside trash at Brick Lane Market, London

BEFORE YOU WATCH

PREVIEWING A. Read the information. The words in **bold** appear in the video. Match these words with their definitions below.

Few of us can go a day without using something made of plastic. Most modern plastics are **synthetic**, and are made from fossil fuels. These synthetic plastics are useful because they are easy to shape and can last a long time. However, they take several hundred years to biodegrade, which can be bad for the environment. If people throw plastic items on the ground or into rivers, they can end up in the sea. This has a terrible **impact** on sea animals and can eventually **ruin** our oceans. Scientists are now working to find nongrass **alternatives**—called bioplastics—that can help reduce plastic pollution.

- synthetic • a. option; other possibility
- impact • b. not natural; man-made
- ruin • c. a strong or powerful effect
- alternative • d. to harm or destroy something

DISCUSSION B. Work with a partner. Make a list of the objects around you that are made of plastic. How many plastic things do you use in a day? What do you do with them after using them?

Video 157

Each unit concludes with a **video** related to the unit theme, supported by previewing and viewing activities.

Critical Thinking encourages learners to connect the video's content with what they have learned in the rest of the unit.

WHILE YOU WATCH

COMPLETION A. Look at the chart below. Then watch the video and complete the chart.

Synthetic plastics	Bioplastics
made from fossil fuels (e.g., _____)	made from _____ (e.g., a rubber tree)
most of it ends up as trash, especially _____ plastics	can break down much _____ than synthetic plastics

MULTIPLE CHOICE B. Watch the video again. Complete each sentence with the correct answer.

- The amount of plastics produced since 1950 is roughly the same _____ as 1,600 pyramids of Giza.
a. weight b. size
- About _____ of all plastic waste comes from single-use plastics.
a. 20 percent b. 40 percent
- According to the video, we can reduce plastic pollution by _____.
a. placing a tax on synthetic plastics and making bioplastics cheaper
b. avoiding single-use plastic products and creating more bioplastics

CRITICAL THINKING: Applying Ideas Imagine you want to start a campaign in your area to reduce plastic waste. Think about the tips and solutions in this unit. Which would you focus on? Note your ideas below and describe the project to a partner.

Your project name: _____
Project's purpose/focus: _____
Actions required: _____

Vocabulary Review sections give learners the chance to check their understanding of the unit's target vocabulary. Extra practice activities can be found on the Classroom Presentation Tool.

VOCABULARY REVIEW

Do you remember the meanings of these words? Check (✓) the ones you know. Look back at the unit and review any words you're not sure of.

Reading A

☐ common	☐ confusing	☐ constant*	☐ extract*	☐ huge
☐ long term	☐ recycle	☐ rescue	☐ typically	☐ weak

Reading B

☐ avoid	☐ ban	☐ container	☐ customer	☐ globally*
☐ pollute	☐ quit	☐ reduce	☐ refund	☐ tax

* Academic Word List

158 Video

PACING GUIDE

One unit of *Reading Explorer* typically takes between 2.5–3 hours to complete. All 12 units require approximately 30–36 hours.

By setting aside portions of each unit as homework, or by using extension activities and ancillaries, the length of a *Reading Explorer* course can be adapted to suit a wide range of course durations. Here are some examples:

Recommended Course

- Total course length = **36 hours** (1 unit = 3 hours)
- 12-week course = 3 hours of instruction per week
- 24-week course = 1.5 hours of instruction per week
- This option assumes that the teacher covers all Student's Book content in class. Supplementary activities are given as homework.

Short Course

- Total course length = **24 hours** (1 unit = 2 hours)
- 12-week course = 2 hours of instruction per week
- 24-week course = 1 hour of instruction per week
- This option assumes that the teacher does not use the Student's Book video activities in class. Other sections of the Student's Book (e.g., Vocabulary Practice) are given as homework.

Longer Course

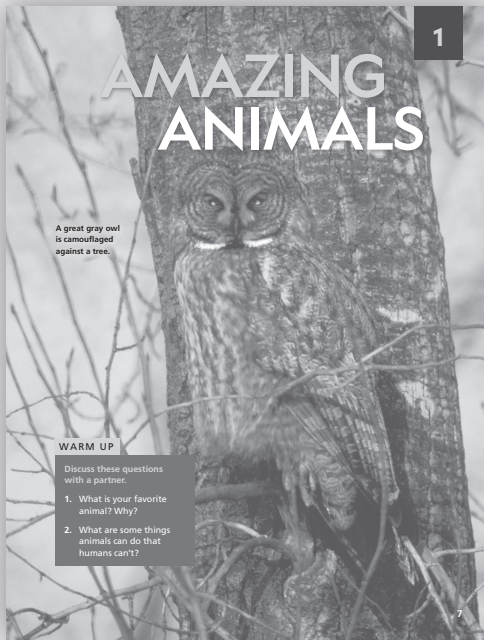
- Total course length = **48 hours** (1 unit = 4 hours)
- 12-week course = 4 hours of instruction per week
- 24-week course = 2 hours of instruction per week
- This option assumes that the teacher covers all Student's Book content in class. Lessons are often extended using supplementary worksheets from the *Reading Explorer* website.

Extended Course

- Total course length = **60 hours** (1 unit = 5 hours)
- 12-week course = 5 hours of instruction per week
- 24-week course = 2.5 hours of instruction per week
- This option assumes that the teacher covers all Student's Book content in class. Supplementary worksheets are used in each lesson. ExamView® quizzes are used regularly to monitor students' progress.

AMAZING ANIMALS

1



UNIT INTRODUCTION

This unit focuses on animal intelligence. In “The Incredible Dolphin,” students read about the ways that dolphins are similar to humans. In “Master of Disguise,” students read about the different ways that octopuses are able to change their appearance based on their surroundings. In the video, “A Chameleon’s Colors,” students will watch a video on chameleon behavior. In the reading skill and vocabulary practice sections, students will also read about other interesting animals, including albatrosses, orangutans, chimpanzees, stick insects, and reef squid.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *albatross flight, animal cognition, chameleon behavior, chimpanzee memory studies, dolphin communication, octopus camouflage, Malayan giant stick insect, bigfin reef squid*

WARM UP



Answer Key

Possible answer(s):

1. I really love goats because they are playful and intelligent.
2. There are many animals with special abilities. Some examples: Bats navigate using sonar, owls can turn their heads all the way around, and dogs can sense when people need help.

TEACHING NOTES

Great gray owls live in the Northern Hemisphere. They are able to hear so well that they can hear

rodents (voles, mice, etc.) moving beneath 60 centimeters of snow. The owls can be completely silent when flying, too. Although they only weigh approximately 2.5 pounds, when measured in length, they are considered to be the world’s largest owl.

- Read aloud the Unit Title as students look at the photo. Ask students why owls might be considered amazing animals.
- Read aloud the caption and explain the word *camouflage*.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *advantage, alike, assist, communicate, feelings, intelligent, method, smart, special, system*

Reading Passage Summary: Dolphins and humans are alike in a number of ways. Dolphins use a system of sounds and body language to communicate. Every dolphin has a “name”—a special whistle that the dolphin chooses for itself. Dolphins live in groups (pods), but join other pods to play. Dolphins also make plans to get what they want—for example, cooperating with fishermen to get to eat the fish that escape from the nets.

Answer Key

Before You Read

- A. (clockwise from top) **1.** brain; **3.** jaw;
4. flippers; **2.** tail
B. b

Reading Comprehension

- A. **1.** b; **2.** b; **3.** c (Para B); **4.** a (Para B);
5. b (Para D)
B. **Communication:** a, c (Para B); **Play:** b, d, f (Para C); **Teamwork:** e (Para D)

Reading Skill

- A. c
B. **1.** b; **2.** a

Critical Thinking

- communication, play, and teamwork/planning
- Possible answer(s): Evidence of intelligence in other animals includes tool use, the ability to pay selective attention, and recognition of patterns.

Vocabulary Practice

- A. **1.** method; **2.** assist; **3.** smart; **4.** special;
5. advantage
B. **1.** alike; **2.** intelligent; **3.** system; **4.** feelings;
5. communicate
C. **1.** difference; **2.** intelligence; **3.** assistance

TEACHING NOTES

Before You Read



A. Labeling: Have students look at the picture and read the sentences in activity A. Explain the word *bones*. Explain that they will use the words in bold. If necessary, complete the first answer as a class. Then have students label the parts in pairs. Check answers with the class.

B. Skimming: Remind students that *skimming* means looking over a text quickly to find out the general meaning. Give students one minute to answer this question: *What is the reading about?* Explain that they will not have enough time to read everything, but they should learn enough information to answer this question. Ask students to compare their answers in pairs, then read and check their answer.

Reading Comprehension



A. Multiple Choice: As this is the first check on reading comprehension, draw students’ attention to the labels in the left column next to the questions. Each question has an objective that is identified. Main idea questions ask “What is this reading about?” Inference questions require students to infer (guess) the answer *based on* the text. Detail questions ask about information that can be found *in* the text. Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 1: Draw students’ attention to the word *NOT* in capital letters. Model the process of elimination for students. The reading talks about option “a” in paragraph B and option “c” in paragraph C, so those cannot be correct. The reading does not mention option “b,” so that is the correct answer.
- Question 2: Explain that readers need to “read between the lines” to fully understand a text. Write the third sentence in paragraph A on the board. Students can eliminate option “c” since

there is no mention of scientists studying cats and dogs. Although option “a” is true, option “b” is the best answer based on the comparative structure of this sentence.

- Question 4: The reading says that it isn’t easy for humans to understand dolphin speech (paragraph B), so option “b” can be eliminated. Paragraph C talks about different dolphin pods, but not whether dolphins can understand dolphins from other pods, so option “c” can be eliminated. Paragraph B clearly states that dolphins talk about many things, so option “a” is the correct answer.

Challenge: Explain that swimming with dolphins is a popular tourist activity in many places. Ask students: *Would you like to swim with dolphins? Why or why not? What would you expect to do or see?*

B. Categorizing: Have students work individually to put the dolphin behaviors in the correct categories. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Skimming for Gist**. Elicit why it is important to get the gist of a reading. It can be helpful to look at the title, headings, photos, and captions so that the reader thinks about what he/she already knows about the topic. The second strategy—reading the first sentence of each paragraph—is useful because the topic sentence is often found there.

A. Skimming: Have students do activity A. Point out that the three topic sentences for paragraphs B, C, and D all mention humans and dolphins, so option “c” is the main idea.

B. Skimming: Point out the picture of an albatross. Give students one minute to skim the passage and answer the questions individually. Then have students read the passage again, and check answers as a class.

- Question 2: This asks students to choose the most appropriate title.

Challenge: Write the following question on the board: *How does the following sentence indicate intelligence? “A parent albatross might fly thousands of kilometers to find food for its young.”* Have students discuss in pairs.

Critical Thinking

- Elicit the three similarities between humans and dolphins mentioned in the reading.
- Have students write ideas and then discuss with a partner. Make a list on the board with the class.

Vocabulary Practice

A. Definitions: This paragraph is about a memory test. Point out that the vocabulary words are in red. Explain that “chimp” is short for *chimpanzee*, and show a picture if necessary. Have students do activity A, then check answers with a partner.

- This paragraph can be another activity for skimming for gist. Before beginning activity A, allow students 30 seconds to skim quickly. Then ask what this paragraph is about.

B. Completion: This paragraph is about orangutan intelligence. Point out the picture of the orangutan. Have students complete the paragraph using the words in the box. Check answers as a class.

- Explain that *alike* means “similar.” Ask: “How are you and your classmates *alike*?” so that students understand this is used differently from *like*.
- Elicit different ways that humans or animals *communicate*.

C. Word Parts: The suffixes *-ance* and *-ence* change words from other parts of speech to nouns. These kinds of nouns are usually either a quality or a state (*difference/intelligence*), or an action (*assistance*). Have students do activity C, then check answers with a partner. If time allows, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *ability, appearance, creature, develop, hide, muscle, pattern, produce, shape, survive*

Reading Passage Summary: There are different kinds of octopuses, and they all are able to change their appearance. Octopus skin has special cells called chromatophores, which contain pigment and can produce spots and patterns, and can reflect light to change the skin color. The octopus can also become smooth or spiky, or change its shape to look like a rock or a dangerous sea creature. Octopuses need to be good at disguises; they have no bones, which means that they have a lot of predators. The diagram on page 15 shows how the octopus has many muscles (including three hearts) as well as neurons in the brain and arms.

Answer Key

Before You Read

A. 1. don't know; 2. other animals; 3. the same
B. how

Reading Comprehension

A. 1. b; 2. c (Para B); 3. a (Para B); 4. c; 5. c
B. 1. a; 2. c; 3. c; 4. a; 5. b

Reading Skill

A. a
B. 1. b; 2. c; 3. a; 4. d

Critical Thinking

Possible answer(s): I think they are both smart in different ways. The dolphin is smart because it's similar to humans—it can play and plan and communicate. The octopus is smart because it is so good at camouflage. I don't know which is smarter, but I'd rather hang out with a dolphin!

Vocabulary Practice

A. 1. ability; 2. appearance; 3. hide; 4. produce; 5. patterns
B. 1. b; 2. a; 3. a; 4. b; 5. a
C. 1. survival; 2. survive; 3. survivor

TEACHING NOTES

Before You Read

A. Definitions: Ask students to look at the photograph and read the caption. Point out that the *coral* is near the octopus. Then have students circle the correct words to complete the sentences. Explain that *look like each other* is another way to say *alike*, one of the vocabulary words in 1A. Check answers with the class.

B. Skimming: Remind students that they learned about skimming in the reading skill in Unit 1A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Point out the title of the passage. If someone is a *master of* something, it means he/she is very good at doing this. A *master of disguise* can be used to describe a magician or a spy. Point out that the skimming question asks if this is about *how* or *why* octopuses disguise themselves. Allow students one minute to skim the article. Point out that students should also look at the diagram on page 15. Have students check their answer in pairs. Then, after they read, check answers as a class. Explain that the main idea of this reading is found in the last line of paragraph A: "How do they do this?" Although paragraph D discusses why octopuses disguise themselves, this is not what *most* of the passage is about.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 3: Point out that this is an inference question. Because the reading explains about white and blue light, we can infer that the octopus would turn red even though the reading does not mention this directly.

- Question 5: If this is the first reference question that students encounter, explain that pronouns take the place of nouns, when it is clear what the pronoun refers to. Point out that the word *they* is found in paragraph D, lines 1 and 2, as well. In line 4 *they* refers to predators, but in lines 1 and 2 *they* refers to octopuses.

B. Matching: Have students read the three main ways that octopuses disguise themselves and then match the statements to these. If this is the first matching activity that students have encountered, complete the first item as a class. Then have students work individually to choose the correct answer. Check answers as a class.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Main Ideas in Paragraphs**. Remind students about main ideas and how they are expressed. At the paragraph level, the main idea is usually expressed in the topic sentence, whereas the other sentences in the paragraph provide supporting details or examples.

A. Main Idea: Have students look at activity A. Point out the picture of the Malayan giant stick insect. Ask how this can help with the main idea. Have students read the paragraph and answer the question individually. Check answers as a class.

B. Main Idea: Ask students to match each paragraph to its main idea. Check answers as a class.

Critical Thinking

Read the question aloud and allow students time to write their answers individually. Encourage students to review the two readings again so that they can add more details to their answers. Then have students discuss their ideas with a partner. If time allows, make a chart on the board and have students supply reasons why they think each is smarter.

Vocabulary Practice

A. Completion: This paragraph is about how squids can change their appearance. Direct students' attention to the picture of the reef squid. Ask which animal the reef squid might be related to (the octopus). Have students do activity A and then check their answers with a partner. If time allows, ask students what they find interesting about this paragraph.

B. Words in Context: Have students do activity B. Check answers as a class.

C. Word Forms: Point out that all the words in the box are part of the same word family; *-or* is usually for a person, while *-al* can be added as a suffix to describe the quality or state. Explain that students should use the context of the sentence to decide which word to use. Have students complete activity C individually and then compare answers in pairs. If time allows, have students write their own sentences with the words.

Challenge: Have students search for more information about animal intelligence; try searching for animal cognition. Ask students to use their research and choose an animal they think is the smartest and to list five reasons why. Have groups of four or five discuss their choices but then decide on one animal in their group. Allow time for the group to create a list of their reasons to convince the class that their animal is the smartest. Ask each group to present their reasons to the class, and encourage other students to ask questions. Finally, have students vote for the group they think has the most convincing reasons.



Video Summary: There are 202 known species of chameleons, and 42 percent live in Madagascar. Chameleons are famous for changing color, and although it used to be thought this was to camouflage themselves, scientists now think it is primarily a way to communicate. Chameleons can change color to attract or warn others, or to show that they are angry or scared. To stay safe, they move back and forth to look like a leaf blown in the wind. To catch food, they use their tongue in a way similar to pulling back the string on a bow. When they let go, their sticky tongue shoots out to catch insects. Unfortunately, many species of chameleons are endangered.

Key Vocabulary: *attract, shoot out, warn*

Answer Key

Before You Watch

- A.** 1. come to you; 2. bad; 3. quickly
B. 1. F (to communicate with each other);
 2. T; 3. F (The forests and other areas where they live are disappearing or are being changed by people.)

While You Watch

A. See **Before You Watch B.**

B. 1. b; 2. b; 3. a; 4. b

Critical Thinking

Possible answer(s): I would like to find out more about the aardvark. It's such a strange-looking animal. How does it use its large snout, long ears, and tail?

B. Quiz: Have students work in pairs to answer the questions. Tell them not to worry if they do not know the answers; they will revisit this section after watching the video.

- Explain the word *disappearing*. Remind students that the word *appearance* is a vocabulary word, and point out that *disappearance* is in the same word family.

While You Watch

A. Gist: Play the video. Have students check their guesses in Before You Watch B.

B. Multiple Choice: Have students read the questions before watching again and circle the best answer based on what they remember. Then play the video again and have students check answers in pairs.

Critical Thinking

First, ask students which animal they found most interesting in this unit, and why. Allow students a minute to review the unit again and discuss their answers. Then have students each choose a different animal that they find interesting, and allow time for students to write their answers to the Critical Thinking questions. Have students share their ideas in pairs. If time allows, make a list on the board of the animals and what students would like to know about them. Have students work together to notice patterns and then share their ideas with the class.

TEACHING NOTES

Before You Watch

A. Previewing: Have students look at the photograph of the chameleon and read the caption. Explain the words *branch* and *tongue*. Ask students to read the extracts from the video and think about the meaning of the words in bold. Have them complete the activity and then check their answers with a partner.

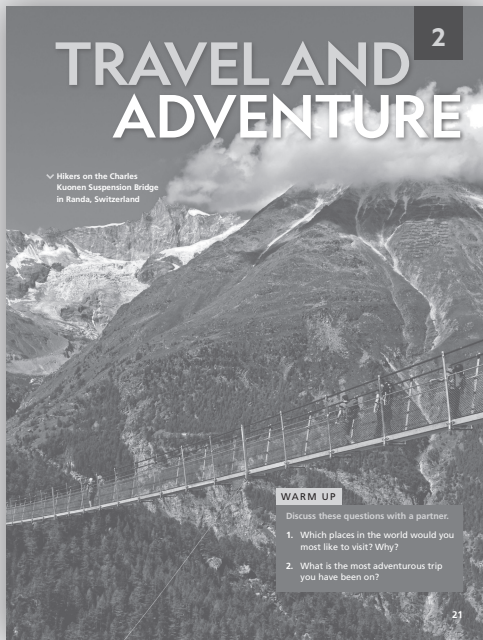
Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TRAVEL AND ADVENTURE

2



UNIT INTRODUCTION

This unit focuses on adventure travel. In “The Trip of a Lifetime,” students read about a bicycle trip from Alaska to Argentina. In “Adventure Islands,” students read about volcano surfing and land diving. In the video segment, “Exploring Laponia,” students learn about an area of natural wilderness in Sweden. Students will also read about surfing China’s Qiantang River, and whitewater kayaking in Chile and on the Potomac River in the United States.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *adventure travel, Gregg Bleakney, Brooks Allen, bungee jumping, land diving, Vanuatu, volcano surfing, whitewater kayaking, Laponia, Haarberg Nature Photography*

WARM UP



Answer Key

Possible answer(s):

1. I would like to visit China because I have always wanted to see the Terracotta Warriors and to stand on the Great Wall.
2. I went to New Zealand and hiked on glaciers and swam with dolphins. It was amazing!

TEACHING NOTES

While many vacations are about relaxing and having fun, in recent years, adventure travel has become popular. The Charles Kuonen Suspension Bridge is almost 500 meters long. It was opened in

July 2017 and is the longest pedestrian suspension (hanging) bridge in the world. This bridge is in the Alps, and is part of a hiking path between two villages. At its highest point, it is 85 meters above the ground.

- Read aloud the Unit Title as students look at the photo. Read the caption and explain *hikers* and *suspension bridge*.
- Have students discuss the questions with a partner and follow up with a class discussion.
- If time allows, make a list on the board of places students would like to go. If possible, show a map of the world and point out each destination.

LESSON OVERVIEW

Target Vocabulary: *advice, ancient, challenge, goal, journey, modern, record, relaxed, route, worry*

Reading Passage Summary: Two friends, Gregg Bleakney and Brooks Allen, decided to bicycle the length of the Americas, from Alaska to Argentina. After four years of planning and saving money, they set off, camping outdoors or staying in hostels. They encountered both friendly locals and international cyclists, saw modern cities and ancient ruins, and cycled through deserts, rain forests, and mountains. Brooks had to return home halfway through the trip, but in May 2007, Gregg made it to the southern tip of South America. Gregg kept an online blog of their adventures. Some of his advice: travel light, be flexible, and be polite.

Answer Key

Before You Read

- A. 1.** They started at Prudhoe Bay, Alaska, United States, and finished at Ushuaia, Argentina. They traveled by bicycle. **2.** They traveled 30,500 km. The trip took two years.
- B.** Possible answer(s): The two friends love bicycling; they wanted to travel in a way where they could see more of the world around them.

Reading Comprehension

- A. 1.** a; **2.** c; **3.** a; **4.** b; **5.** c
- B. 1.** c; **2.** d; **3.** a; **4.** e; **5.** b

Reading Skill

- A.** (boxes from top left in clockwise direction)
4. title; **5.** compass; **3.** scale; **2.** source; **1.** key
- B. 1.** was not; **2.** greater; **3.** northern; Belize

Critical Thinking

Possible answer(s): I think cycling through mountainous areas would be the most challenging because that would test their abilities physically. It might also be difficult if there were areas that had a lot of crime or traffic/pollution.

Vocabulary Practice

- A. 1.** b; **2.** a; **3.** b; **4.** a
- B. 1.** advice; **2.** journey; **3.** route; **4.** relax; **5.** goals; **6.** worry
- C. 1.** object (noun); **2.** address (noun); **3.** record (verb)

TEACHING NOTES

Before You Read



A. Scanning: Remind students that *scanning* means looking quickly to find specific information. Ask students to look at the map and think about the kind of information it provides. Point out that this is a relief map that shows the altitude of the land with different colors for mountainous and flat areas and major waterways, such as rivers. Although some points on the map have been identified, it is not a political map that shows the boundaries and names of countries and states. Have students read the short description and find the correct answers. Check answers as a class.

- Encourage students to use the map for more detailed information such as Prudhoe Bay or Ushuaia [oo-swahy-uh].
- In the reading, students learn that Brooks had to stop in Guatemala. Ask if students know where Guatemala is (it's a country in Central America, just south of Mexico on the map). The photo on page 23 was taken next to ancient Mayan ruins in Guatemala.
- AK and CA are abbreviations for Alaska and California—two states in the United States.

B. Discussion: Have students look at the map and discuss this question with a partner. There is no real answer to this, either on page 22 or in the reading passage, but students can give their own ideas. The best answer is possibly attributed to George Mallory when asked why he wanted to climb Mt. Everest: "Because it's there."

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Elicit meanings for: *cyclist*, *set off*, *online blog*. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: Point out that the full names of the two men appear in paragraph B. For the rest of the reading, they are referred to only by first name. It is stated in paragraph E that Brooks had to return home. Therefore, we know that only Gregg completed the trip.
- Question 5: This can be inferred from Gregg's last piece of advice in paragraph F: *be polite*.

Challenge: Write the following on the board: *Where would you most like to stop on this route? Why? Discuss your answer with a partner.*

B. Main Idea: Remind students that they learned about identifying main ideas in paragraphs in the reading skill in Unit 1B. If necessary, have students turn back to that section of the Student's Book and review this skill again. Have students work individually to match the main idea to each paragraph. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Elicit the ways that maps can help students better understand a text. Write on the board: *A picture is worth a thousand words*. Ask students how a map gives clues to help readers understand information. Finally, have students read the paragraph on **Understanding Maps**.

A. Labeling: Ask what this map is about and how students knew this. Explain that they should write "4" in the box next to the title. Then have

students look at the map and work in pairs to label the other parts of the map with the features. When completed, check answers as a class.

- Explain to students that the answers will be given in a clockwise rotation.

B. Completion: Have students complete activity B, and then check answers as a class.

Challenge: Have students return to the map on page 22 and add locations onto the larger map. Write the following on the board: *The reading says Gregg passed through 12 countries. Compare the map on page 22 to an atlas and list the countries you think he traveled through.*

Critical Thinking

Have students look back at the map and allow time for them to write their answers. Then have them discuss their answers in pairs.

Vocabulary Practice

A. Words in Context: Have students do activity A and then check answers with a partner.

- Questions 1 and 2: Ask students to name other places in the world that are *ancient* and *modern*.
- Question 4: Point out that the word *challenge* has a more positive connotation than *difficult*.

B. Completion: This passage gives some tips for hikers. Have students do activity B. Check answers as a class.

C. Word Usage: Explain that each of the three words has the same form as both a verb and noun, although it is pronounced differently. Have students do activity C, then check answers with a partner.

- Ask students which words are nouns and which are verbs (1 and 2 are nouns, 3 is a verb). Explain that usually nouns have the first syllable stressed, and verbs have the second syllable stressed.

LESSON OVERVIEW

Target Vocabulary: *active, almost, bravery, century, escape, familiar, hit, nation, original, tie*

Reading Passage Summary: The small South Pacific nation of Vanuatu [vah-noo-ah-too] offers visitors two of the most exciting and dangerous activities in the world: volcano surfing and land diving. People have started climbing Mount Yasur on Tanna Island, in order to “surf” the active volcano. The goal is to escape the erupting volcano. Land diving is an extreme sport on Pentecost Island, and the origin of bungee jumping. For almost 15 centuries, this has been a part of a religious ceremony. Men tie two tree vines to their ankles, climb a wooden tower and jump, hoping to touch the earth with the top of their head.

Answer Key

Before You Read

- A.** Possible answer(s): **1.** The person is jumping off a tower, but he is attached to a cord or a vine so he won’t hit the ground. **2.** skydiving
- B.** Possible answer(s): These are unusual sports that you can do on the islands of Vanuatu. Both activities are very dangerous!

Reading Comprehension

- A. 1.** b; **2.** c; **3.** a; **4.** b; **5.** c
- B. 1.** T (Para B); **2.** NG; **3.** NG; **4.** F (Para C); **5.** T (Para C)

Reading Skill

- A. 1.** a; **2.** b; **3.** a; **4.** c
- B. 1.** Antarctica; **2.** 10 meters; **3.** because surfers just need a wave and a board; **4.** skateboarding

Critical Thinking

Possible answer(s): I would suggest that they go whitewater rafting in the national park because it’s beautiful and exhilarating.

Vocabulary Practice

- A. 1.** active; **2.** nation; **3.** almost; **4.** bravery
- B. 1.** hit; **2.** original; **3.** century; **4.** familiar; **5.** tie; **6.** escape
- C. 1.** owner; **2.** idea; **3.** song

TEACHING NOTES

Before You Read

A. Discussion: Start by asking students to describe what they see in the picture. Then have students discuss sports or activities they have tried.

- Question 1: Ask students to look carefully at the photo. If students have tried bungee jumping, ask how this is similar or different.
- Question 2: Write *extreme sports* on the board and ask students what this means. The word *extreme* means “far beyond the norm.” Some students will be familiar with extreme sports such as skydiving, bungee jumping, and bicycle motocross racing from the X Games. These sports have a high degree of danger because of the height, speed, and strength needed as well as unpredictable factors.

B. Predicting: Remind students that predicting means guessing what a reading will be about. Explain that this can help with reading quickly because it prepares readers to think about a topic and the information that they already know. Make sure that students know the definitions of *volcano*, *surfing*, and *diving*. Have students discuss their predictions with a partner. Then check answers after students read.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: In paragraph B, the fifth sentence shows that volcano surfing is not an ancient sport. This eliminates option “a.” Although there is no mention of anyone not being able to do volcano surfing, paragraph C states that land diving is done by local boys and men as part of a religious ceremony and women are not allowed to do it; so this eliminates option “b.” These are both definitely extreme activities, so option “c” is correct.
- Question 3: Point out that this is different from other reference questions because it does not have a direct word that it refers to in the passage. Instead, the word *people* is implied in the phrase “. . . for those (people) interested in adventure and sport . . .” in lines 2 and 3.
- Question 4: The first line of paragraph B states that Mount Yasur is an active volcano on Tanna Island. This eliminates options “a” and “c.” Line 3 states that people have climbed the mountain for centuries, so option “b” is the true statement. Remind students that a century covers 100 years.
- Question 5: In line 3 in paragraph C, land diving was the original name, not bungee jumping. There is no mention of whether it is more popular today or in the past. Option “c” is correct, based on the words *ancient tradition* in the last line of paragraph C.

B. Evaluating Statements: Have students read the statements and choose the correct answer. Remind them that NG means that the information isn’t given in the passage so there is no way to know if it is true or false.

- Question 1: On the board, write: *Yasur is one of Vanuatu’s few active volcanoes*. Elicit that “one of few” means there are not many, but there are some.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Scanning for Key Details**. Remind students that scanning means to look quickly to find specific information; that they do not need to read every word. Often this information is a name, place, date, number, or reason.

A. Analyzing: Have students work independently to complete activity A. Check answers as a class.

B. Scanning: Have students read the questions again in activity A and then scan the reading for the specific information. Set a time limit of one to two minutes to demonstrate that scanning should be done quickly. It may be helpful to complete the first question as an example: Point out that students should look for a place. When they see the words *cold water* and then *Antarctica*, this gives them their answer. Check answers as a class.

Critical Thinking

Have students take notes individually for two to three minutes, and then work in groups of three or four to share their ideas. Write a list of the activities and locations on the board. Allow students to access the Internet to show pictures of the places they mention in their discussions.

Vocabulary Practice

A. Completion: This passage is about whitewater kayaking. Have students do activity A. Then have them check their answers with a partner. For the third item, point out that *almost entirely* means that part of the falls are not in Maryland.

B. Definitions: Have students do activity B. Point out that there will be one extra word. Check answers as a class.

C. Collocations: Explain that collocations are words that commonly go together. Have students complete activity C individually and then compare answers in pairs.

Video Summary: The Haarbergs are nature photographers who have traveled all over the Laponia World Heritage Site in Sweden, one of the largest wilderness sites in Europe, just below the Arctic Circle. They must take everything they need with them, using sleds in the winter, and carrying their gear on their backs in the summer. The two work together to photograph the beauty of the area.

Key Vocabulary: *gear, untouched, wilderness*

Answer Key

Before You Watch

A. 1. is not; **2.** in its original state; **3.** set of things they take with them

B. Possible answer(s): The weather could be a challenge—it will be very cold and if there are storms, they might have to stay there for longer than they planned. It's in the wilderness, so there's probably no communication with the outside world. If they get hurt, it could be dangerous.

While You Watch

A. Possible answer(s): In summer, the sleds don't work, so the Haarbergs have to carry all their gear on their backs.

B. Possible answer(s): **1.** It's easier in the winter because they can transport everything on sleds. **2.** oatmeal, crackers, cheese, chocolate, and nuts; **3.** She slipped on a rock and fell into a river, but she was not seriously hurt.

Critical Thinking

Possible answer(s): I would want to go on the bike trek because I could see different places and meet a lot of people. I would not try land diving—it sounds scary!

B. Predicting: Explain that the expression *to face a challenge* means that a person needs to do something difficult in order to succeed. Have students work in pairs. Tell them not to worry if they don't know the answers; they will revisit this section after watching the video.

While You Watch

A. Gist: Play the video. Have students check their answers to their predictions in Before You Watch. Elicit the meanings of the following words: *communication, mood, oatmeal, rock, sleds, slipped, support*. Have students work in pairs to note other challenges mentioned in the video.

B. Short Answer: Have students read the questions before watching the video. Then play the video again and have students write their answers. Check answers as a class.

- Question 3: On the board, write the sentence from the videoscript: *Luckily, she wasn't seriously hurt*. Ask students what this means.

Critical Thinking

Have students choose one of the activities or adventures mentioned in this unit that they would like to participate in. Have students take notes on what they remember and why they would like to take part in it. Have students repeat this for an activity they would not want to try. Allow them to read the articles again if necessary. In pairs, have them compare their ideas. If time allows, have a class vote on which activities people want to participate in most and least.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

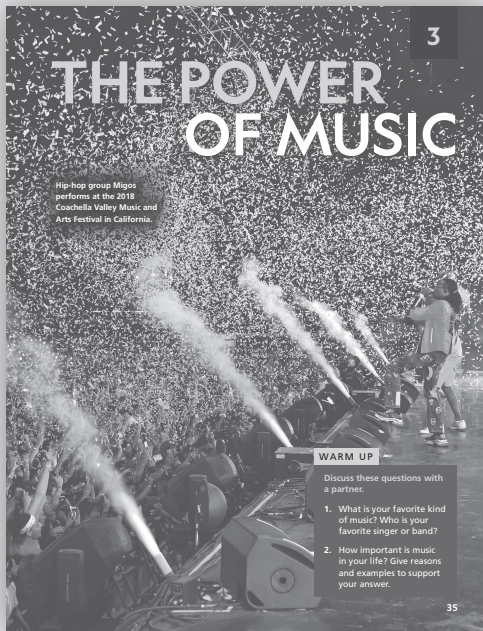
TEACHING NOTES

Before You Watch

A. Previewing: Have students complete the activity and then check their answers with a partner.

THE POWER OF MUSIC

3



UNIT INTRODUCTION

This unit focuses on music and its effects on the human brain. In “Move to the Music,” students read about how the beats per minute (BPM) in a song can affect a person’s motivation to exercise. In “A Musical Boost,” students read about how music can affect hearing, speech, concentration, and memory. In the video, “The Mozart Effect,” students watch a video about an experiment where participants are asked to solve word puzzles both before and after listening to music.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Coachella music festival, Gottfried Schlaug, Jymmin, Mafa and Western music, Migos, the Mozart Effect, music and the brain, Nina Kraus Northwestern University, Oliver Sacks, Tom Fritz music*

WARM UP



Answer Key

Possible answer(s):

1. I like different kinds of music. I really like pop music from the 1980s. David Bowie is one of my favorite singers. I also like Lady Gaga.
2. Music is very important in my life. I almost always have music on when I’m at home or when I’m driving in the car. If I’m feeling sad or grumpy, music often cheers me up.

TEACHING NOTES

Coachella is one of the largest and most successful music festivals in the world. It was founded in 1999

and takes place in April in Indio, California, in the Colorado Desert. Different stages continuously present both well-known and emerging artists, and festival-goers are permitted to camp on the grounds. Migos is a hip-hop group that consists of three rappers from Georgia.

- Read aloud the Unit Title as students look at the photo. Ask if students think that music can be powerful. If so, why?
- Read aloud the caption and explain the words *perform* and *festival*.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *beat, control, distract, energy, mood, pay attention, range, seem, social, steady*

Reading Passage Summary: Music helps us to exercise, both by distracting us and motivating us. Upbeat music can energize us by putting us in a good mood. When exercising, the ideal beats per minute (BPM) of a song should be within a range of 120–140 BPM. One experiment had groups of participants exercise to music, and then exercise on special Jymmin machines, which made music as participants exercised. A large majority of participants reported that they felt less tired after making music on the machines. This may be because they had more control and it was social. The researcher also wonders if this could help with more serious conditions, like depression.

Answer Key

Before You Read

- A.** Possible answer(s): **1.** three times a week; I go for a run and I do yoga. **2.** I always listen to music when I exercise. I listen to classic rock when I run. During yoga classes, the instructor usually plays peaceful music.
- B.** Possible answer(s): I think music helps because it can distract us while we're exercising. It can also make us feel motivated to do our best. When the songs are upbeat, the music can put us in a good mood.

Reading Comprehension

- A. 1.** a; **2.** c; **3.** b (Para B and sidebar); **4.** c; **5.** b (Para D)
- B. 1.** distracts; **2.** tired; **3.** motivate; **4.** make; **5.** control; **6.** depression

Reading Skill

- A. 1.** b; **2.** a; **3.** c
- B. Main idea:** Generally, songs with 120–140 beats per minute (BPM) are the best for exercising. **1.** because most people want to

get their heart rate up to this level during a workout; **2.** Lady Gaga; **3.** "Make You Feel My Love" by Adele

Critical Thinking

Possible answer(s): I prefer listening to songs in English when I exercise, because a lot of songs that I like in my own language are slower than 120 beats per minute. I like the song "Viva La Vida" by Coldplay.

Vocabulary Practice

- A. 1.** range; **2.** seems; **3.** steady; **4.** beat; **5.** beat; **6.** energy
- B. 1.** distract; **2.** mood; **3.** control; **4.** social; **5.** pay attention
- C. 1.** in; **2.** under; **3.** out of

TEACHING NOTES

Before You Read

- A. Discussion:** Have students read the questions and discuss their answers with a partner. Ask them if they have similar or different answers from their partner.
- B. Predicting:** Have students discuss the question with a partner. Then have them read the passage to find out more.

Reading Comprehension

- A. Multiple Choice:** Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.
- Question 3: Direct students' attention to the list of songs and their BPM. Option "a" is too slow, option "c" is too fast, but option "b" is within the 120–140 range.
 - Question 4: Make sure that students know the meaning of *create*.

Challenge: For students who have completed the multiple-choice activity, write on the board: *Describe the Jymmin machine in your own words. Would you use one? Why or why not?* Have students discuss with a partner.

B. Summarizing: Explain that this is a short summary of the reading. The words in the box are already in the correct form. It may be helpful to complete the first blank as a class. Elicit that *distracts* is the correct answer. Students should notice that this word needs to be in the third person singular. Have students work individually to complete the summary. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Supporting Details**. Explain that supporting details are facts, examples, or reasons that help us understand the main idea more fully. Give an example, if possible with a photograph of a musician. First, say simply, “This is my favorite musician.” Elicit that this is a more meaningful statement if you give information about the musician, an example of his/her music, and why you like him/her.

A. Matching: Have students do activity A, then check answers as a class. Ask students which words signaled the example (*such as*) and the reason (*because*).

B. Supporting Details: Have students read the paragraph and underline the main idea. Have students check their answer in pairs. Then have students work individually to complete the short answer questions, and check answers as a class. For question 2, ask “Is this a good song to exercise to? Why or why not?” For question 3, ask “Why isn’t this song suitable for exercising?”

Challenge: Have students reread one of the readings in Unit 1 or 2. Ask them to choose a paragraph and underline supporting details. Have them share their answers in groups of three or four.

Ask the other students to decide if the details are facts, reasons, or examples.

Critical Thinking

Have students read the question, and allow time for them to write their answers. Have students discuss their ideas with a partner. Ask if their song choices reflect what they read about BPM and exercising. On the board, make a list of songs that students like to listen to when they exercise.

Vocabulary Practice

A. Completion: This paragraph is about running to music. Have students do activity A and then check answers with a partner. Elicit the meanings of *adjust*, *free-form jazz*, *generally*, *match*, *predictable*, *rhythm*, and *tend to*. Remind students to read the direction line; one word is used twice. Check answers by asking a volunteer to read the completed paragraph aloud.

- Question 1: Explain that *range* is used to describe everything in between two specified amounts. Ask students if they can remember the ideal BPM range (120–140). Elicit other uses of *range*, such as *price range*.
- Question 2: Point out that *seems* is often used in phrases with “it seems that X is important.” Elicit that this means the speaker is not certain, but this is how it appears to be.

B. Completion: Have students do activity B. Check answers as a class. Ask students for examples of what *distracts* them, what puts them in a good (or bad) *mood*, what a person needs to *control* in order to walk properly, what *social* events they like to attend, and what they need to *pay attention* to in class.

C. Collocations: Have students do activity C and then check answers with a partner. If time allows, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *certain, concentrate, connection, damaged, ignore, improve, normally, overall, sharp, skill*

Reading Passage Summary: According to recent studies, there is a strong connection between music and language. Researcher Nina Kraus had two groups of people listen to a person talking in a noisy room. The musicians could hear the person more clearly. Gottfried Schlaug found that stroke patients who cannot speak normally are still able to sing. Playing an instrument or singing can help in many ways, including concentration, listening skills, and overall language abilities.

Answer Key

Before You Read

A. Possible answer(s): **1. Singing:** emotion, hearing, memory, speech; **Playing an instrument:** emotion, movement, touch, sight, balance, hearing, memory; **Listening to music:** emotion, hearing. **2.** I think music and language are similar in that they both involve hearing, emotion, and communicating with other people.

B. a

Reading Comprehension

A. 1. a; **2.** b (Para B); **3.** c; **4.** c; **5.** b

B. 1. F (Para B and C); **2.** NG; **3.** NG; **4.** T (Para D); **5.** NG; **6.** T (Para E)

Reading Skill

A. Line 2: because of; Line 4: Since; Line 7: due to

B. 1. because of its ability to express emotions across cultures; **2. Since** he wanted to include a variety of Western music types; **3. probably due to** the fact that the rhythms and melodies of Western music are similar to those of basic human speech

Critical Thinking

Possible answer(s): Listening to music helps me study some subjects such as science. Classical music helps me because it doesn't have

any words. If I am reading something difficult, I find music with lyrics too distracting.

Vocabulary Practice

A. 1. a; **2.** a; **3.** a; **4.** b; **5.** b

B. 1. connection; **2.** improved; **3.** damaged; **4.** normally; **5.** sharp

C. 1. connect; **2.** react; **3.** discuss

TEACHING NOTES

Before You Read

A. Discussion: Have students read the questions and discuss their answers with a partner. Encourage students to look at the diagram of the brain and to think of as many as possible for each category. Make a list on the board.

B. Predicting: Have students read the question and the title. Have students compare answers with a partner. Ask them to give a reason for their choice. Explain that *boost* has several meanings: to lift something up, to raise (and therefore improve), and to promote. Then have students read the passage and check their answers.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Elicit the meaning of the verb *train*. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 4: The article mentions that the study is from Northwestern and that Kraus is the study leader. Because Kraus works at Northwestern, option "a" is wrong. The article does not mention whether the researchers play instruments. Because it is clear from the passage that both Kraus and Schlaug are interested in the connection between the brain and music, option "c" is the correct answer.

- Question 5: Explain that *getting* someone to do something means that you convince them.

B. Evaluating Statements: Have students read the statements and choose the correct answer. Remind them that NG means the information is not given in the passage.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Supporting Reasons (1)**. Level 1 *Reading Explorer* teaches students two different ways of identifying supporting reasons. Remind students that they practiced this skill more generally on page 40 as they learned about identifying supporting details. Identifying reasons (why things happen) can help a reader understand the text more fully. Point out that reasons can come before or after an action. Signal words include *because (of)*, *since*, and *due to*.

A. Noticing: Read the first two sentences of the paragraph aloud. Ask students for examples of Western music. Elicit the meaning of *express emotions*, and ask for examples (*love, sorrow*). Model the activity by asking students for the reason why music is popular. Point out Cameroon on the map. Elicit meanings of *rhythm, melodies*, and *regardless of*. Have students do activity A individually. Check answers as a class.

B. Supporting Reasons: Elicit the reading strategy: Students should look for the words that signal reasons to find the answers quickly. Have students do activity B. Check answers as a class.

Critical Thinking

Have students write their ideas and then discuss with a partner. If possible, play “four corners.” On the board, write *Listening to music helps me study*. Designate each corner of the room: *strongly agree*, *strongly disagree*, *somewhat agree*, and *somewhat disagree*. Have students stand in the corner that corresponds to how they feel about the statement. Give students two minutes to discuss their opinions

with the students in their corner. Then have them speak to students in other corners and compare ideas. Have groups share their findings with the class.

Vocabulary Practice

A. Words in Context: Have students do activity A. Then have them check answers with a partner. Ask students: “What’s something that is difficult to *ignore*? What makes it difficult to *concentrate*? What’s an important *skill* for a teacher to have? What is the *overall* mood of the class today?”

- Question 2: There are two meanings of *certain*. It can mean “sure”: *He is certain that he knows the answer*. In sentence 2, *certain* means “specific, not all”: *Certain foods can help you lose weight; certain songs can help you exercise*.

B. Completion: This paragraph is about the work of neurologist Dr. Oliver Sacks. Have students do activity B. Check answers as a class by asking a volunteer to read the completed paragraph aloud. Ask students to note the parts of speech for each word, as this can help them choose the correct word. Model the first sentence as an example: This sentence needs a noun. Explain that we often use the collocation *connection between*.

- Elicit synonyms for *improved* (made better), *damaged* (hurt), and *normally* (usually).
- *Sharp* can be used in a figurative or a literal way. On the board, write: *A knife is literally sharp*. What does it mean for a mind to be sharp? Elicit answers from the students.

C. Word Forms: Have students complete activity C individually and then check answers in pairs.

- Question 2: Elicit that *mixed reactions* means that some like the song and some do not.
- Give students additional practice by writing two columns on the board labeled “Verb” and “Noun.” Under Verb, write *introduce, prepare, and suggest*. Under Noun, elicit and write the noun form (*introduction, preparation, suggestion*). Have students work in groups to find other nouns with *-tion* and add them to the chart.

Video Summary: Psychologist Jim Coan is doing an experiment to test the Mozart Effect. Does listening to classical music make people smarter? He asks participants to figure out word puzzles. When he plays Mozart and asks participants to try more puzzles, they are better able to solve them. The experiment continues with other types of music. The narrator states that listening to any enjoyable music can help with concentration, reasoning abilities, and creative skills, because your brain reacts to the enjoyment of the music, not the music itself.

Key Vocabulary: *experiment, figure out, IQ*

Answer Key

Before You Watch

A. 1. figure out; **2.** IQ; **3.** experiment

B. 12 months of the year; 7 wonders of the world; 24 hours in a day; 18 holes on a golf course

While You Watch

A. See **Before You Watch B.**

B. 1. a; **2.** b; **3.** b

Critical Thinking

- ▶ Possible answer(s): It was good that Dr. Coan tried a different kind of music. But I think that once participants knew the general format of the word puzzles, it was easier for them to figure out the answers for the other puzzles later on.
- ▶ Answers will vary.

B. Quiz: Have students work in pairs to answer the questions. Tell them not to worry if they don't know the answers; they will find out the answers when watching the video.

While You Watch

A. Gist: Play the video. Have students write the answers to the puzzles. Explain that these are the same puzzles as in Before You Watch B.

- The 7 Wonders of the World originally referred to places in the ancient world, including the Great Pyramids at Giza, Egypt.
- Have students work in pairs to create their own word puzzles. Then play music and have other pairs solve the puzzles.

B. Multiple Choice: Have students read the sentences before watching the video. Explain the meaning of *reasoning abilities*. Then play the video again and have students check answers in pairs.

Critical Thinking

- ▶ Have students read the questions and then discuss them with a partner and write their ideas. Ask for other reasons why the participants might have done better after listening to music.
- ▶ What are other ways to test the Mozart Effect? Have students work in new groups to discuss how they will conduct their experiment and what they expect to find. Have groups note their ideas and then present them to the class.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Have them complete the activity and check their answers with a partner. Direct students' attention to the two questions at the end of the paragraph: *What do you think the results showed? Can classical music make people smarter?* Have students discuss their ideas in pairs. Ask volunteers to share their ideas with the class.

INTO SPACE



UNIT INTRODUCTION

This unit discusses space exploration. In “Life Beyond Earth?” students will read about astronomers who believe that intelligent life exists beyond our planet. In “Living in Space,” students will read about the possibility of human colonies on Mars and on the moon. In the video, “The Red Planet,” students will learn about Mars, the most studied planet after Earth.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Alexandra Barnett astronomer, colonizing Mars, David Wolf astronaut, Elon Musk, International Space Station, Kepler Space Telescope, NASA, Robert Zubrin, Seth Shostak, SpaceX, Stephen Hawking*

WARM UP

Answer Key

Possible answer(s):

1. There are a lot of good movies and TV shows about space! I liked the movie *The Martian*, where the main character is left alone on Mars and he has to figure out how to survive.
2. I think there might be life in outer space, because the universe is so big!

TEACHING NOTES

David Wolf was born in 1956 and has been to space four times. An astronaut, medical doctor, and electrical engineer, he has been on seven spacewalks

and spent 128 days aboard the International Space Station. In one *National Geographic* article, he talks about his first day at the Mir Space Station when he opened the wrong end of a container of grape juice and it spilled everywhere! He also tells a story of his first spacewalk when he was stranded outside for several hours. Even so, he says that spacewalks are among his best memories from his time in space.

- Read aloud the Unit Title as students look at the photo.
- Read aloud the caption and explain the words *astronaut*, *spacewalk*.
- Have students discuss the questions with a partner and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *allow, circle, contact, distance, exist, identify, powerful, search, tool, whole*

Reading Passage Summary: Two astronomers, Seth Shostak and Alexandra Barnett, believe intelligent life exists elsewhere in the universe. Recently, powerful telescopes have allowed scientists to identify small planets in other solar systems that could have intelligent life. Shostak does not think that we have already been visited by beings from outer space, but they may be trying to contact us. Shostak thinks we will make contact in the next 20 years.

Answer Key

Before You Read

A. 1. planets; **2.** galaxy; **3.** telescope;
4. astronomer

B. a

Reading Comprehension

A. 1. b; **2.** c; **3.** a (Para C); **4.** b; **5.** a (Para D)

B. 1. the Hubble Telescope (Para B); **2.** no, because the distance between planets is too great (Para D); **3.** flashes of light (Para D)

Reading Skill

A. Possible answer(s):

- intelligent life exists elsewhere—first reason is time. The second reason is size.
- powerful telescopes
- intelligent beings might eventually contact us; they could be trying to communicate with us now

B. 1. 12 billion; **2.** huge; **3.** galaxies; **4.** telescopes;
5. radio signals; **6.** flashes of light

Critical Thinking

Possible answer(s): I think people would be very excited. I think governments around the world would need to work together. Some people would want to make contact immediately, but others would be scared that we could be invaded.

Vocabulary Practice

A. 1. powerful; **2.** search; **3.** identify; **4.** allow;
5. exist

B. 1. a; **2.** b; **3.** a; **4.** b; **5.** a

C. 1. harm; **2.** care; **3.** power

TEACHING NOTES

Before You Read

A. Definitions: Direct students' attention to the photograph and explain that the paragraph is about this telescope. Allow students time to read the paragraph independently and complete the sentences with the words in bold. Then check answers with the class.

- Check comprehension by asking students: *Why was the Kepler space telescope important?* (Answer: It discovered over 2,600 planets.)
- Explain that *universe* covers all of space. Within the universe, there are at least 100 billion *galaxies*. Each galaxy is a very large group of *stars, planets, dust, and gases*. Within galaxies are *solar systems*—groups of planets and moons that revolve around one or more stars. Our galaxy is called *the Milky Way*.

B. Skimming: Remind students that they learned about skimming in the reading skill in Unit 1A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Allow students one minute to skim the article. Have students check their answer in pairs. Then, after they read, check answers as a class.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 1: Remind students that people write (and read) to communicate. Purpose questions ask what the author wanted to communicate to readers.
- Question 2: Options “a” and “b” are mentioned in paragraph B, so these can be eliminated. There is no mention of water, so option “c” is the correct answer.
- Question 3: Point out to students that the question says, “according to the reading passage ...” Although option “b” is true, the reading does not mention distance as a factor. The correct answer is option “a” because this has changed from the past to the present.
- Question 4: “Other life forms” is another way of saying “beings from outer space.” Explain that “other” refers to life forms *other* than those found on Earth.

Challenge: Write the following questions on the board: *What would another planet need in order to have intelligent life? How would they contact Earth?* Have students discuss the questions in pairs.

B. Short Answer: Have students answer the questions individually. Encourage them to scan the text again to find the answers. Have students check answers in pairs.

- To reinforce scanning skills, ask students what key words they searched for to find the answers.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on

Summarizing: Using a Concept Map. Concept maps are another kind of graphic organizer where the visual layout helps the reader to perceive which ideas are main ones and which are supporting details that often appear as linking words.

A. Analyzing: Some students find it effective to use different colored highlighters, using one color for main ideas and another for supporting details

or examples. The task of physically marking the text may help students process information.

B. Summarizing: Ask students what the main idea of this concept map is, and where they can find it (the middle circle). Then ask what information the left side and right side contain (left: why intelligent life might exist / right: how they might be found). If necessary, complete the first item as a class. Elicit the meaning of *unlikely*. Have students complete the concept map individually and then check answers in pairs or as a class.

- Ask students if they think using a concept map is useful. Why or why not?

Challenge: Ask students to choose one of the other readings that they have completed in class, and create a concept map. Have them work in pairs and then share their concept maps with the class.

Critical Thinking

Have students read the questions and discuss with a partner. Then have students note their ideas and discuss with a larger group or the class. If time allows, review vocabulary for adjectives of emotion (*nervous, excited, amazed*, etc.).

Vocabulary Practice

A. Completion: This paragraph is about the methods scientists use to find out if there is life on other planets. Have students do activity A and then check answers with a partner. To check comprehension, ask: “Is it easy to *contact powerful* people? When you travel, what do you use to *identify* yourself?”

B. Words in Context: Have students do activity B. Check answers as a class.

C. Word Parts: Have students do activity C, then check answers with a partner. Point out that even though the suffix *-ful* means “full of,” there is only one “l” in the suffix, not two. If time permits, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *advance, benefit, concern, culture, environment, independent, medicine, mission, neighbor, surface*

Reading Passage Summary: A number of countries plan on establishing space stations on the moon within the next 10 years. The goal is to prepare humans to live on other planets. Scientist Robert Zubrin and SpaceX CEO Elon Musk both think we should start by colonizing Mars. Although skeptics say that it's too expensive, and people traveling such a long distance could face health problems and other difficulties, sending people into space seems sure to happen in the future.

Answer Key

Before You Read

- A. 1.** rocket; **2.** astronauts; **3.** establish; **4.** colony
B. Possible answer(s): (Students should support their opinions with reasons.) Sending humans into space to live is a good idea because we might need to find new places to live, if climate change continues to impact Earth.

Reading Comprehension

- A. 1.** a; **2.** b; **3.** c (Para B); **4.** c; **5.** c
B. 1. c; **2.** d; **3.** b; **4.** a

Reading Skill

A. Main idea: Humans should colonize space.

Supporting reasons: we can learn a lot; we can create new human societies on other planets; any advances made in space will benefit people on Earth.

- B. 1.** too expensive; **2.** the journey is not short; **3.** health problems; **4.** life would be extremely difficult

Critical Thinking

- Possible answer(s): It depends. I'd only want to move to Mars if everyone in my family moved, too. Otherwise I'd be too lonely.

- Possible answer(s): The reading has given me more to think about. Stephen Hawking said that "our future should be safe" once we colonize space, which I agree with. But I would hate having to stay indoors most of the time (Para E)!

Vocabulary Practice

- A. 1.** independent; **2.** surface; **3.** mission; **4.** neighbor; **5.** environment
B. 1. a; **2.** a; **3.** b; **4.** a; **5.** b
C. 1. unfamiliar; **2.** work; **3.** safe

TEACHING NOTES

Before You Read

A. Completion: Have students read the vocabulary words and the definitions. Then have students individually complete the paragraph using the correct word form. Check answers with the class.

- Question 2: Point out that students will need a plural noun after the collocation *a group of*.

B. Predicting: Allow students time to read the sentence and write their answer individually. Encourage students to use their background knowledge and their own imaginations to answer this question. Compare answers as a class.

- If time allows, discuss the fact that science fiction accounts of the colonization of Mars—such as Bradbury's *Martian Chronicles*—have long been popular. Ask for other examples of movies or novels. Point out that recent scientific developments make the prospect more likely. Space landers and rovers, including the Phoenix, Spirit, Opportunity, Curiosity, and Insight have been exploring the planet and learning more about its surface. In 2012, a Dutch company called Mars One was formed to put a permanent human colony on the planet by 2023. SpaceX was established in 2002 to "revolutionize space technology with the ultimate goal of enabling people to live on other planets."

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 1: Remind students of the meaning of a purpose question. Also, point out that *colonization* is a noun that comes from the word *colony*. In the reading, the word *colony* means a group of people living together.

B. Main Idea: Remind students that they learned about identifying main ideas in paragraphs in the reading skill in Unit 1B. If necessary, have students turn back to that section of the Student's Book and review this skill again. Have students work individually to match the main idea to each paragraph. Then have them compare their answers in pairs. Ask students what details they remember for each of these main ideas.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Supporting Reasons (2)**. Remind students that they have already learned about this concept. Elicit the words that often signal reasons (*because* (*of*), *since*, *due to*) and why it is important to understand these signals. Explain that reasons can also be arguments for or against an idea, which will help readers form their own opinions on a topic.

A. Analyzing: Have students complete activity A. It may be helpful for students to read paragraph C aloud in pairs as they underline the supporting reasons. Check answers as a class.

B. Completion: Tell students to first answer the questions based on what they remember from the reading. Then have them check their answers by scanning for the specific information. Check answers as a class.

- Have students work in pairs and complete a T-chart, with reasons for and against sending humans into space. Check answers as a class and write the chart on the board for students to access while they complete the critical thinking activity.

Critical Thinking

- ▶ Have students read the question, and allow them one to two minutes to write their reasons individually. Then have students compare answers with a partner. Write "it depends" on the board, and explain that often, conditionals or an implied conditional with the modal *would* follow this expression.
- ▶ Have students discuss their answers with a partner. Encourage them to refer to statements in the reading to support their answers.

Vocabulary Practice

A. Definitions: This paragraph is about living conditions on Mars. Have students read the paragraph aloud and then do activity A. Have students check their answers with a partner. To check comprehension, ask: "What does it mean to be *independent* as a teenager? What are the *surfaces* of the desk/floor/walls made of? Is it important to know your *neighbors*? Why or why not?"

B. Words in Context: Have students do activity B. Check answers as a class.

- To check comprehension, ask: "Can you think of some important *advances* in science and technology? What are typical *concerns* that people have when traveling?"

C. Collocations: Have students complete activity C and then compare answers in pairs. To check comprehension, ask: "What kind of *environment* do you like when you are: a) studying? b) out with friends?"

Video Summary: Mars, the most studied planet after Earth, was formed 4.5 billion years ago and is the second smallest planet in our solar system. The Romans named the planet Mars after the god of war, due to its red color; the planet is covered with red dust. Now, the planet is dry, barren, and cold, but scientists think that billions of years ago, it was warmer and had water on its surface. Water can still be found in polar ice caps, and it's possible that life might have existed on the planet. Since the 1960s, missions to Mars have attempted to understand the planet, and to see if it could support life once again.

Key Vocabulary: *barren, humanity, launch*

Answer Key

Before You Watch

- A.** 1. humanity; 2. barren; 3. launch
B. 1. F (4.5 billion); 2. F (the Roman god of war);
 3. T (Olympus Mons); 4. F (50 million years ago, all volcanic activity stopped)

While You Watch

- A.** See **Before You Watch B.**
B. 1. 4.5; 2. smallest; 3. Africa; 4. Earth's;
 5. minus 142 / -142; 6. ice

Critical Thinking

Answers will vary.

B. Quiz: Have students work in pairs to answer the questions. Tell them not to worry if they don't know the answers; they will revisit this section after watching the video.

- Question 4: Elicit the meaning of an *active* volcano.

While You Watch

A. Gist: Play the video. Have students check their answers to the quiz in Before You Watch. Have students correct the false statements. Then check answers as a class. Ask students if they were surprised by any of the statements.

B. Completion: Have students read the concept map before watching again. Then play the video again and have students check answers in pairs.

- Elicit or explain the meaning of *formed* and *continents*. If necessary, direct students to the definition of *diameter* (the footnote on page 61).

Critical Thinking

Have students rank their answers individually. Explain that ranking means that they put these tasks in the order they think is the most to least important. Then have students compare their answers in groups of three or four. Ask if their reasons are similar or different. Have the groups brainstorm other tasks or challenges, and make a list on the board. Ask the class what they think the biggest challenge would be.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Have them complete the definitions and then check their answers with a partner.

- Explain the meaning of *fascinated*, *manned mission*, and *the key to (survival)*.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

CITY LIFE

5



UNIT INTRODUCTION

This unit focuses on cities around the world. In “Global Cities,” students read about the Global Cities Index, which ranks cities based on factors connected to business, people, media, entertainment, and politics. In “A Taste of Two Cities,” students read about Japanese immigrants in São Paulo, Brazil, and, three generations later, Japanese-Brazilians who moved to Hamamatsu, Japan. As a result, there’s excellent Japanese food in Brazil, and delicious Brazilian food in Japan. In “New York Skyscraper,” students will watch a video about the construction of a high-rise building in New York City. Students will also read about New York City’s Times Square, and the Gold Souk in Dubai.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Global Cities Index, Gold Souk Dubai, Hamamatsu Japan, Liberdade district, One Bryant Park, Times Square, Tokyu Plaza Omotesando Harajuku*

WARM UP

Answer Key

Possible answer(s):

1. I think many people choose to live in cities because there are more job opportunities there. Also, big cities are usually more exciting because there is a lot to do and see (compared to small towns).
2. New York City, Los Angeles, Tokyo, Shanghai, London, Paris, Dubai, Nairobi, Rio de Janeiro; these cities are important because they are rich in history and have large populations. Some are capital cities, so they are political and/or business centers.

TEACHING NOTES

Tokyu Plaza Omotesando Harajuku is a shopping mall in Tokyo, Japan, with an entrance that has a kaleidoscope of mirrors. Shoppers can ride the escalators and watch the view reflected from many different angles. There is also a rooftop garden with large trees, in the middle of a very busy city.

- Read aloud the Unit Title as students look at the photo. Ask students what words they think of when they read *city life*.
- Read aloud the caption and explain the words *mirrored* and *reflects*.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *access, attract, especially, international, option, organization, politics, potential, predict, source*

Reading Passage Summary: To answer the question “What makes a city great?” the creators of the Global Cities Index looked at a number of factors: business, people, media, entertainment, and politics. The details of each of these categories are listed in the article. There is also a chart ranking the top 12 cities in 2018, with the scoring breakdowns. The creators of the index also predict which cities will be more powerful in the future.

Answer Key

Before You Read

- A.** Possible answer(s): **1.** I’ve been to New York, London, and Paris. All are exciting places, with a lot of people and a fast-paced way of life. **2.** All four cities are similar in terms of business. New York and London are similar in terms of people, too. Tokyo does not score as well in terms of entertainment and politics. Paris doesn’t score as well in terms of people.
- B.** Possible answer(s): Nairobi, in Kenya, might become more powerful because it is a rising technology hub and could attract international businesses and talented people.

Reading Comprehension

- A.** **1.** a; **2.** b; **3.** c (Para C); **4.** a; **5.** a
B. **1.** Shanghai; **2.** Indian; **3.** middle class;
4. Egypt; **5.** politics

Reading Skill

- A.** **1.** powerful; **2.** red; **3.** media; **4.** yellow;
5. politics
B. **1.** a; **2.** b; **3.** c

Critical Thinking

Answers will vary.

Vocabulary Practice

- A.** **1.** options; **2.** especially; **3.** attracts;
4. international; **5.** predict
B. **1.** b; **2.** b; **3.** a; **4.** a; **5.** b
C. **1.** net; **2.** national; **3.** section

TEACHING NOTES

Before You Read



A. Discussion: Have students look at the Global Cities Index and read the key in order to understand what they see. Ask one or two questions to check comprehension. For example, ask what “blue” represents. Then ask which city has a greater score for business: Los Angeles or Seoul? Allow students time to discuss with a partner. Then have students share their ideas with the class.

- Students may disagree with the Global Cities Index, based on their own experience. Explain that they might agree once they read the entire article, but if they still disagree, encourage them to research the information and report back to the class.
- Ask students for words that can describe cities, and make a list on the board.

B. Predicting: Ask students to read the questions and then predict answers. Encourage them to read the list of the top 12 cities and then think about cities that are not on the list. Allow students time to write their answers and then share their ideas in groups of two or three.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: The description of *entertainment* includes restaurants (food), so that eliminates option “a.” The description of *people* includes

universities (education), so that eliminates option "c." There is no mention of weather, so the correct answer is option "b."

- Question 4: *Urban* is an adjective that refers to cities. *Rural* is used for countryside.
- Question 5: The writer thinks that there are other cities that will become more powerful in the future (paragraphs C and D), so this eliminates options "b" and "c."

Challenge: Have students go online to search for information about one of the cities featured in the "Future Leaders" section. Have them share what they learned in small groups.

B. Summarizing: Remind students that they learned about summarizing with a concept map in the reading skill in Unit 4A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Have students work individually to complete the concept map. Encourage students to read paragraph C again to find the information. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Understanding Charts and Graphs**. Elicit why charts and graphs are important to read. Explain that when readings include charts or graphs, this can give readers a lot of extra information that can be very helpful for understanding a topic. These can be especially helpful when reading in English, since students are able to access a lot of information without having to read a long paragraph. Review the graph in the green box and ask: What is this graph about? What is it comparing? How do you know how much coffee is consumed? What is the source for this information?

A. Understanding Graphs: Have students first try to complete the paragraph without reviewing the reading, and then look again at the reading to check their answers. Check answers as a class.

B. Analyzing: Have students complete activity B, and then check answers as a class.

Challenge: Have students write additional questions, using the information in the Global Cities Index. Then have students ask and answer their questions in small groups.

Critical Thinking

Allow students time to write their answers to the questions. After they have ranked their top three cities, have them compare their choices with a partner and give reasons. If time allows, have students work in groups and tell them to imagine that their group can move to one of the cities on the list, but they have to agree on one city. Give students five minutes to convince each other, and then write a list of the selected cities on the board.

Vocabulary Practice

A. Definitions: This paragraph gives information about Times Square in New York City. Have students look at the photo of Times Square and ask them what they know about this location. Have students do activity A and then check answers with a partner.

- To check comprehension, ask: "What *attracts* visitors to your city? What are some restaurant *options* in your neighborhood that you *especially* recommend?"

B. Words in Context: Have students do activity B. Check answers as a class. To check comprehension, ask: "Is it easy to get Internet access in your city? What are international *organizations* that help children? Do you know anyone who has the *potential* to be a leader in *politics*? What is your main *source* of information?"

C. Word Parts: Have students do activity C and check answers with a partner. Point out that there is no space between *inter-* and the base word. Ask students to think of other words with the prefix *inter-* and make a list on the board. Examples: *interaction*, *interrupt*, *interview*. If time permits, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *coast, community, district, event, generation, goods, popular, population, store, traditional*

Reading Passage Summary: In 1908, Japanese immigrants, called *nikkei*, started moving to Brazil to work on coffee plantations. Many settled in the São Paulo neighborhood of Liberdade. Now, there are many Japanese markets and restaurants there. Three generations later, a reverse migration began to take place. Many Japanese-Brazilians moved to the city of Hamamatsu in Japan. Now it's possible to eat excellent Japanese food in Brazil, and traditional Brazilian food in Japan!

- B. 1.** coffee; **2.** Liberdade; **3.** markets;
4. sushi; **5.** tourists; **6.** 1980s; **7.** factories;
8. Portuguese; **9.** bread

Critical Thinking

Possible answer(s): There are many ways that my country's cuisine has been influenced by foreign cuisines. Pizza (from Italy) and noodles (from China) are widely available. We also have spicy dishes with hot peppers from Mexico.

Vocabulary Practice

- A. 1.** popular; **2.** district; **3.** coast; **4.** traditional;
5. stores; **6.** goods
B. 1. a; **2.** b; **3.** a; **4.** b
C. 1. population; **2.** communication; **3.** generation

Answer Key

Before You Read

- A. 1.** neighborhood; **2.** settle; **3.** immigrants
B. Possible answer(s): Maybe there are Japanese immigrants in São Paulo, and Brazilian immigrants in Hamamatsu.

Reading Comprehension

- A. 1.** b; **2.** a (Para B); **3.** b (Para B); **4.** b;
5. c
B. 1. NG; **2.** F (Para C); **3.** NG; **4.** T (Para C);
5. F (Para C)

Reading Skill

- A.** Possible answer(s): **Main idea:** Why is each country's food so popular in the other?
Key details: In 1908, people from Japan began moving to Brazil to work on coffee plantations. / Over time, the *nikkei* opened many Japanese markets and restaurants in the Liberdade district. / In the 1980s ... [o]ver 300,000 Japanese-Brazilians moved to Japan, mainly to work in electronics and automobile factories. / Over time, a number of Brazilian restaurants and stores opened in Hamamatsu. / Today, it's possible to eat excellent Japanese food in São Paulo and traditional Brazilian cuisine in Hamamatsu.

TEACHING NOTES

Before You Read



A. Definitions: Have students read the paragraph and match the words to the definitions. Ask students if they know of other places similar to Chinatown. Have they been to any? If so, ask them to describe how the neighborhood was different from the rest of the city.

B. Predicting: Encourage students to read the title and to look at the photograph. Ask where they think this photograph was taken. Then have them read the caption. Ask if they were surprised. Draw students' attention to the globe on page 71 to see how far away Hamamatsu and São Paulo are from each other, and ask what they think the two cities have in common. Explain that they will understand the connection after they read the article.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the reading passage.

- Question 1: The main focus of the article is on the food in the two places. This is clear from the title, the introduction, and the conclusion.
- Question 2: Elicit the meaning of *nikkei*. Note that students can scan for the word in italics.
- Question 3: Paragraph B states that the street market is only open on the weekends, so option “b” is the correct answer.
- Question 5: The term *traveling through* implies that the people will visit a place but not settle there, so the correct answer is option “c.”

B. Evaluating Statements: Have students read the statements and choose the correct answer. Remind them that NG means that the information is not given in the passage.

- Question 3: The article mentions that there is a street market in São Paulo, but there is no mention of a street market in Hamamatsu.
- Question 4: The article states that the Japanese-Brazilian immigrants spoke only their native language (Portuguese).
- Question 5: The article describes *feijoada* (in paragraph C, in parentheses after the term in italics). It states that *feijoada* contains beef and pork, so it is not vegetarian.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Summarizing: Using a T-chart (1)**. Level 1 *Reading Explorer* teaches students two different ways a T-chart can be used to summarize information. Remind students that they practiced using a concept map in Unit 4. Another way to summarize information is to use a T-chart. This is especially important when the reading compares two things, when it discusses advantages and disadvantages, or when it has reasons for and against an argument. In this unit, students are using the T-chart to compare two things.

A. Analyzing: Have students scan to complete activity A. Explain that underlining the main ideas and key details will help them summarize material later. Check answers in pairs.

B. Summarizing: Tell students to answer the questions based on what they remember. Then have them check their answers using the information that they underlined in activity A. Check answers as a class. Ask students to reflect on how note-taking could be helpful to them after reading an article.

Critical Thinking

Allow students time to make some notes on the ways that their country's food has been influenced by other cuisines. If students are from a variety of countries, pair students from different backgrounds so that they can compare the two cuisines.

Challenge: Encourage students to write their notes using a T-chart. Ask: “How is the food in two countries (_____ and _____) similar or different?”

Vocabulary Practice

A. Completion: This paragraph gives information about the Gold Souk in Dubai. Have students look at the photo and read the caption. Then have students do activity A and check answers with a partner. Have a volunteer read the completed paragraph aloud.

- Ask students if their city has one main shopping *district*. Are there certain *goods* that the city is famous for? Are there any *traditional* markets?

B. Words in Context: Have students do activity B. Check answers as a class. To check comprehension, ask: “What is the *population* of your city? What is an important *event* in your city? Does your *community* have many *generations*, or does it primarily have an older or a younger population?”

C. Word Forms: Point out that the missing words are nouns, and the suffix is pronounced “ayshun.” Have students complete activity C and then check answers in pairs. Have students think of other words with this suffix (*explanation*, *orientation*) and write sentences using the words.

Video Summary: The location of the building One Bryant Park is close to Times Square and is one of the busiest places in New York City. There are a number of challenges to building at this location, from digging the foundation to getting the materials to the site. In addition, because there isn't a lot of room, building materials need to be lifted into the tower, but the crane operators are so high up that they can't see what they lift. Each piece must be put together almost 300 meters above the ground. Including the spire, the building is 366 meters high, which makes it one of New York City's tallest buildings.

Key Vocabulary: *spire, foundation*

Answer Key

Before You Watch

- A. 1.** five years; **2.** Possible answer(s): the long pole on the top of the building; the spire is 78 meters tall (subtract 288 from 366); **3.** Possible answer(s): the part of the building under the ground
- B.** Possible answer(s): I think building the spire on such a tall building must have been very difficult.

While You Watch

- A.** a; b; d
- B. 1.** see what he is lifting; **2.** large size; **3.** dangerous; **4.** above

Critical Thinking

Possible answer(s): **Pros:** good views, 24-hour security, easier to maintain (no yard); **Cons:** risk of fires, lack of space, not a lot of nature

students read the information and answer the questions. Check answers as a class.

B. Predicting: Have students work in pairs to answer the question and write their ideas. If students find this question challenging, encourage them to think about city life and how a crowded space might make construction difficult. Tell students they will find out the answers when watching the video.

While You Watch

A. Gist: Have students read the options and notice which ones they had mentioned in Before You Watch B. Play the video. Check answers with the class.

B. Completion: Have students read the sentences before watching the video. If necessary, elicit or explain the meaning of *access, beams, crane operator, factors, no room for error*. Then play the video again. Have students do activity B and check answers in pairs.

Critical Thinking

Have students work in pairs to complete the chart with pros and cons of living in a city skyscraper. Have students compare ideas with another group, or create a larger chart on the board with student responses.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

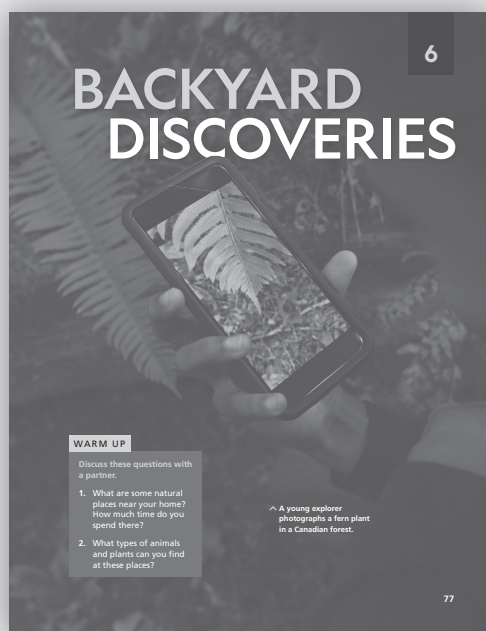
Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to look at the photograph and read the caption and title. Ask them what they think the title means. Then have

BACKYARD DISCOVERIES



UNIT INTRODUCTION

This unit focuses on our natural world. In “In One Cubic Foot,” students read about small organisms on the ground or in the water, and about a project that photographs and counts the organisms. In “What’s in Your Neighborhood?” students read an interview with citizen scientist Gabby Salazar about how she became involved in citizen science projects. In the video, “BioBlitz,” students learn about how a team of volunteers and scientists worked together to identify the different plants and animals in a recreation area in California. Students will also read about fairyflies, the Lost Ladybug Project, and the citizen science websites NestWatch and Pl@ntNet.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *BioBlitz, David Liittschwager, E.O. Wilson, fairyflies, NestWatch, Pl@ntNet, Lost Ladybug Project*

WARM UP

Answer Key

Possible answer(s):

1. I live near the ocean, and I spend a lot of time there swimming in the summer and going for walks in the winter.
2. There are seagulls and crabs on the beach, and also seaweed and beach roses that grow nearby.

TEACHING NOTES

According to Fai-Wei Li of Duke University, ferns—one of the oldest groups of plants on Earth—have a gene that allows them to “see better” than other plants in the shade, which is necessary in forests, where thickly growing trees don’t allow much sunlight to reach the

ground. The United Nations has named March 21 as the International Day of Forests. Forests around the world are in danger of deforestation. According to *National Geographic*, more than 5.2 million hectares of forest are lost each year. The International Day of Forests is a day when “individuals, communities, and governments are encouraged to engage in activities to protect forests, prevent deforestation, and support sustainable forestry practices.”

- Read aloud the Unit Title as students look at the photo. Read the caption and elicit the meaning of *backyard* and *discoveries*.
- Have students discuss the questions with a partner, and follow up with a class discussion.
- Make a list on the board of natural places where students like to go.

LESSON OVERVIEW

Target Vocabulary: *break down, cycle, discover, maintain, material, process, region, scientist, species, team*

Reading Passage Summary: According to naturalist E.O. Wilson, small organisms are the “heart of life on Earth.” Most live on or below the ground and break down dead plants and animal materials in order to return nutrients to the soil. Scientists know very little about many of these organisms. Photographer David Liittschwager has gone around the world to set up 30-centimeter cubes on the ground and in the water. Then he and his team photographed and counted the organisms that they saw in the cubes. They often discovered hundreds of organisms, some only a millimeter in size.

Answer Key

Before You Read

- A. 1.** organisms; **2.** tiny; **3.** soil
B. Possible answer(s): They break down dead plants and animals into nutrients, so that the living animals and plants in the area can thrive.

Reading Comprehension

- A. 1.** a; **2.** b; **3.** b (Para B); **4.** c (Para C); **5.** a
B. 1. a healthy environment; **2.** many were new species (Coral Reef caption); **3.** Monteverde, Costa Rica (Tropical Cloud Forest caption)

Reading Skill

- A.** Paragraph B Line 2: When; Line 3: Later;
 Line 4: eventually; Line 5: then
B. (clockwise from top) a; e; d; f; b; c

Critical Thinking

Possible answer(s): a city park—I want to know whether urban life affects the variety of organisms; a riverbed—I wonder if there are different organisms here in comparison to the coral reef; a cave—surely a dark cave would have fewer organisms. I’d love to be proved wrong!

Vocabulary Practice

- A. 1.** species; **2.** cycle; **3.** regions; **4.** scientists;
5. discovered
B. 1. a; **2.** b; **3.** b; **4.** b; **5.** a
C. 1. up with; **2.** out of; **3.** into

TEACHING NOTES

Microorganisms are living things too small to be seen with the naked eye. They include bacteria, fungi, algae, a range of one-celled animals and plants, and viruses, although some scientists don’t include the latter. Microbes are extremely adaptable and have been found in the most extreme of Earth’s environments, including deep in the ocean, under the Earth’s crust, at high altitudes, and in boiling hot water. Ask students to look at the photo and try to identify types of organisms. Some familiar ones are shrimp-like animals, sea worms, fish, crabs, urchins, and starfish.

Before You Read



A. Definitions: Have students read the caption and note the words in bold. Have students match these words with the definitions. Ask students to point out examples of insects, fish, and plants in the picture. Check answers as a class.

B. Predicting: Have students read the first paragraph and then discuss the question with a partner. Ask students what a *naturalist* studies. Then ask students what they think “the heart of life on Earth” means.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. If necessary, elicit the meaning of *cube* by pointing out the green cube in the photographs. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: Point out that a synonym for *miniature* is *tiny*.
- Question 3: Direct students to the first line of paragraph B for the answer.
- Question 5: Explain that although organisms may be shiny or look like little stones, the reason the photographer calls them gems is because they are new discoveries, so they are *scientifically* valuable and precious.

Challenge: Write the following task on the board:
What is a natural place that you know well?
Imagine a 30-centimeter green cube in this place.
List as many organisms as you can that could be found here.

B. Short Answer: Have students review the reading and answer the questions. Note that the answers for two of the three questions are found in the captions connected to the photographs with the titles “Coral Reef” and “Tropical Cloud Forest.” Have students work individually. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Understanding Sequence (1)—Processes**. Level 1 *Reading Explorer* teaches students two different ways of dealing with sequence. Draw students’ attention to the list of signal words in the green box. If time allows, have students think about the steps they took in order to arrive at school today. Have them work with a partner and list as many steps as they can in one minute. Ask: “How many signal words did you use? Were these helpful?”

A. Identifying: Have students do activity A, and then check answers as a class. Although *eventually* is not listed in the green box, it is used in the reading and is a synonym for *finally*. *Eventually* can have a slightly different meaning in some languages. Explain that in English, it describes something that happens after a long time or after a lot of problems.

B. Sequencing: Have students do activity B, and then check their answers by reviewing what they underlined in paragraph B on page 79. Check answers as a class. Write the answers on the board in a clockwise pattern.

Challenge: Write the sequence signal words on the board, and have students close their books. Have them tell a partner as many steps in the life cycle process as possible, using the signal words. Explain that their partner should correct them if they mention steps out of sequence. Then have the partner close their book and repeat the activity.

Critical Thinking

Have students check three options. Then have them discuss their answers in pairs.

Vocabulary Practice

A. Completion: This passage is about a very small insect called a fairyfly. Direct students’ attention to the photograph of the fairyfly. Have students do activity A and then check answers with a partner. Elicit the definition of *region*, based on the context. Have volunteers read each completed paragraph aloud. Ask students what they find most interesting about this reading.

- Ask students if they know the name of the fairy in *Peter Pan* (Tinkerbell). Link this with the name of the new species of fairyfly, *Tinkerbella*.

B. Words in Context: Have students do activity B. Check answers as a class. Ask: “What is a *process* that you need to complete each day? How can you *maintain* good grades? Do you support any sports *teams*? What *materials* are your clothes made of? What *breaks down* dead plants?”

C. Collocations: Have a student read the directions for activity C aloud. Have students do activity C and check answers with a partner. Ask students to find other collocations with the word *break*. There are idioms as well as phrasal verbs that use the word *break*, such as *break a leg*. Make a list on the board, and then have the students write additional sentences with these collocations.

LESSON OVERVIEW

Target Vocabulary: *contribute, experience, image, online, post, rare, research, review, take part, upload*

Reading Passage Summary: Gabby Salazar began working on citizen science projects over 10 years ago, when she posted her photographs and data on eBird, a project where people around the world photograph birds and record information about them. She explains that it's easy to become a citizen scientist. One project, iNaturalist, studies animals and plants and can give the name of a plant or animal based on a photograph. Another project, Wildwatch Kenya, hides cameras in trees and when an animal passes by, the camera takes a photo. After that, citizen scientists review the images online. A sidebar also describes the Lost Ladybug Project, which is creating a map of ladybug species.

Answer Key

Before You Read

A. Possible answer(s): **1.** Anyone can be a citizen scientist. **2.** They take photos or interview people and then share their pictures and information on the Internet. This helps scientists get important information quickly.

B. a; c

Reading Comprehension

A. **1.** b; **2.** c; **3.** a; **4.** b (sidebar); **5.** b (sidebar)

B. **1.** F (Para A); **2.** T (Para B); **3.** NG;

4. F (Para D); **5.** NG

Reading Skill

A. a. 3; b. 4; c. 2; d. 1

B. **1.** website; **2.** tips; **3.** nest; **4.** visit; **5.** upload

Critical Thinking

Possible answer(s): **Project name:** NestWatch; **Purpose:** to report on bird nesting sites so that researchers can track bird populations and how their nesting sites change over time; **How you can take part:** Take a short test to be a NestWatcher and then find a nest, visit it every three or four days and record what you see, then upload your observations to the website.

Vocabulary Practice

A. **1.** research; **2.** upload; **3.** review; **4.** images; **5.** contribute

B. **1.** b; **2.** b; **3.** b; **4.** a; **5.** a

C. **1.** place; **2.** care; **3.** a break

TEACHING NOTES

Before You Read



A. Discussion: Have students read the paragraph and answer the questions. Elicit the meaning of *data* and *regular people*. Ask students if they think they might like to be citizen scientists. Why or why not?

B. Skimming: Remind students that they learned about skimming in the reading skill in Unit 1A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Have students read the introduction to the passage and the question headings, and then choose the topics that they think Gabby Salazar will discuss.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Point out that the answers to some of the questions (4 and 5) are found in the sidebar. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

B. Evaluating Statements: Have students read the statements and choose the correct answer. Remind them that NG means the information is not given in the passage, so there is no way to know if it is true or false. Check answers as a class. If time allows, have students correct the two false answers: question 1 and question 4.

- Question 3: Although it can be inferred that this is volunteer work and she does not get paid, the reading does not mention money at all, so the correct answer is NG.
- Question 4 is an inference question. Although it does not say that volunteers don't have to be in Africa, because the project is online, it can be inferred that citizen scientists can be anywhere in the world.
- Question 5: There is no mention of any awards, so the correct answer is NG.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Understanding Sequence (2)—Instructions or Directions**. Remind students that they have already learned about this concept. Have a student read the example aloud. Then elicit other common sequences that students need to follow, such as cooking recipes or instructions for assembling a piece of furniture.

A. Sequencing: Have students read paragraph C of Reading B again and then do activity A. Check answers as a class.

B. Completion: Have students read the paragraph. Elicit the meaning of *certified*, *nest*, *pass (a test)*, *record*, *tips*, and *track*. Then have students do activity B individually. Check answers as a class.

Critical Thinking

Have students search for websites about projects they are interested in. They can also research one of the websites mentioned in the reading. Model information from the NestWatch website as an example. Have students take notes individually and then share their ideas with a partner. Write a list of the websites on the board. Ask: "After your research, are you inspired to become a citizen scientist? Why or why not?" If students already discussed this question at the beginning of the unit, ask them if their answer has changed. If necessary, have students complete this for homework.

Vocabulary Practice

A. Completion: This passage is about another citizen science app called Pl@ntNet. Make sure that students know the meaning of *confirm*, *database*, and *developer*. Have students do activity A. Then have them check their answers with a partner. Elicit the meaning of *collective knowledge*. Ask for volunteers to read each completed paragraph aloud.

B. Words in Context: Have students do activity B. Check answers as a class. Ask students: "How often do you *post* on social media? What class activities do you like to *take part* in? Have you ever seen a *rare* animal in the wild?"

C. Collocations: *Take* is a verb that has many collocations. Have students complete activity C individually and then compare answers in pairs. If time allows, have students look in a dictionary or on a dictionary website for even more collocations with the verb *take*.

Video Summary: Students and scientists take part in a BioBlitz in the Golden Gate National Recreation Area in California. Here, a team of around 9,000 volunteers and 320 scientists is helping to find and identify all the plant and animal species in the park. They even work through the night to find the creatures that only come out after dark. The team works in all weather, and immediately posts pictures and videos online for other people to see. By learning about the species found in the area, scientists and citizen scientists can help to protect them.

Key Vocabulary: *classifying, diversity, inventory, volunteers*

Answer Key

Before You Watch

A. 1. c; 2. a; 3. d; 4. b

B. Possible answer(s): Problems—bad weather conditions, poor Wi-Fi connection. Yes, I'd be interested in taking part in a BioBlitz because I'd like to contribute to scientific research. I might meet people with similar interests, too.

While You Watch

A. a. 4; b. 2; c. 5; d. 3; e. 1

B. 1. b; 2. b; 3. a; 4. b

Critical Thinking

See Critical Thinking Unit 6B for an example.

Elicit the meaning of the phrase: *problems that people might face* (difficulties that people may have). After the video, have students return to this question to see if their answers have changed.

While You Watch

A. Sequencing: Have students read the sentences before they watch the video. Play the video. Have students check answers in pairs.

B. Multiple Choice: Have students read the questions before watching the video. Then play the video again and check answers as a class.

- Question 1: Elicit the meaning of *in some cases* (sometimes). The exact words in the video are: "And in some cases, we're finding absolutely new things that the park service didn't realize existed in this park."
- Question 4: The total number of species found was 2,304.

Critical Thinking

Remind students of the critical thinking activity on page 87. In this activity, students will create their own project. If necessary, brainstorm a list of ideas on the board. Then allow students time to take notes on their own projects. Have them describe their projects in pairs. If time allows, have students describe their projects in larger groups and vote on which citizen science project they would want to participate in most.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TEACHING NOTES

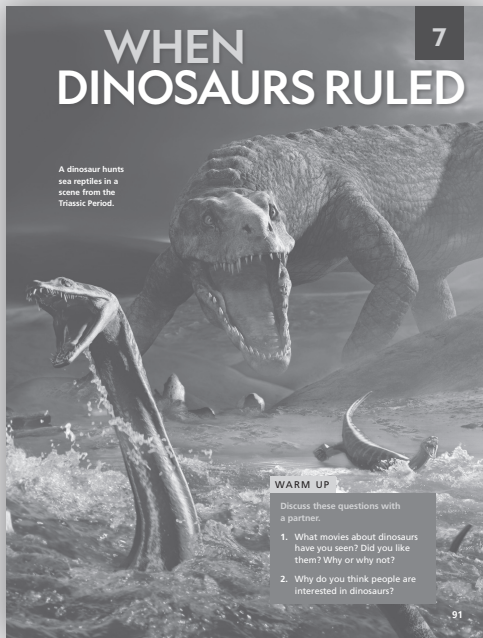
Before You Watch

A. Previewing: Have students read the paragraph and then match the words in bold to their definitions. To check understanding, ask students: "What is a BioBlitz? Who can join a BioBlitz?" Explain that the Golden Gate National Recreation Area is in California.

B. Discussion: Have students read the questions and answer in pairs. Encourage students to read the paragraph carefully for possible challenges.

WHEN DINOSAURS RULED

7



UNIT INTRODUCTION

This unit focuses on a variety of dinosaurs and discusses possible causes for their extinction. “The Truth about Dinosaurs” explains common misconceptions about *T. rex*, flying dinosaurs, and dinosaur extinction. In “Mystery of the Terrible Hand,” a pair of giant arms found in the Gobi Desert leads to the discovery of a new kind of dinosaur, almost as big as a *T. rex* but that looked more like an ostrich. The video, “Dinosaurs: A Brief History,” provides an overview and discusses different types of dinosaurs and explanations for their mass extinction. Students will also read about the Loch Ness Monster and the ancient sea monster *Dakosaurus*.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Cretaceous, Dakosaurus, Deinocheirus, Jurassic, Loch Ness Monster, paleontologists, plesiosaurs, pterosaurs, Triassic, Troodon, Tupuxuara, Tyrannosaurus rex*

WARM UP

Answer Key

Possible answer(s):

1. I've seen *Jurassic Park*. I liked it because it's hard to imagine animals that huge, and the movie showed how powerful dinosaurs were.
2. I think people are fascinated because the dinosaurs were so powerful, yet they still became extinct. It's also interesting to imagine what Earth would be like if dinosaurs still existed today.

TEACHING NOTES

Dinosaurs lived on Earth from more than 200 million years ago and became extinct about 66 million years ago. Although paleontologists

have found many dinosaur fossils, questions about dinosaurs are still unanswered. The Triassic Period was the first period of the Mesozoic Era, and it occurred from approximately 248 million years ago to 206 million years ago.

- Read aloud the Unit Title as students look at the photo. Someone who “rules” has power over everything around them. Ask students why this might be the title of the unit.
- Read aloud the caption and elicit why this is an illustration, rather than a photograph.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *climate, completely, fairly, giant, heavy, hunter, in reality, opposite, probably, relative*

Reading Passage Summary: The information that people know about dinosaurs isn't always true. Scientists have learned a lot about dinosaurs, and this article explains some of the myths or half-truths about these animals. Scientists now believe that the *T. rex* might have been a scavenger rather than a predator, that pterosaurs couldn't fly well, and that modern-day birds are actually descendants of the dinosaurs.

- Possible answer(s): I think it's likely that a few dinosaurs were intelligent. It seems like the *T. rex* must have been a predator, but it's possible that it couldn't move well. Maybe pterosaurs could take off like birds, but scientists haven't found out how yet.

Vocabulary Practice

- A.** 1. in reality; 2. giant; 3. completely; 4. probably; 5. climate
B. 1. relative; 2. heavy; 3. hunter; 4. opposite
C. 1. teacher; 2. actor; 3. inventor

Answer Key

Before You Read

- A.** 1. prehistoric reptiles; 2. 66 million years ago; if an animal is *extinct*, it means that it no longer exists.
B. 1. Was *T. rex* a powerful predator? Yes or No; 2. Could dinosaurs fly? No; 3. Are all dinosaurs extinct? Not entirely (birds)

Reading Comprehension

- A.** 1. b; 2. c (Para A); 3. c; 4. b; 5. c (Para D)
B. 1. c (Para C); 2. a (Para A); 3. a (Para A); 4. b (Para B); 5. c (Para C)

Reading Skill

- A.** 1. like; 2. For example; 3. such as
B. 1. the two-meter *Troodon*; 2. in the movies, *T. rex* is often a fast-moving giant; 3. *Tupuxuara*
C. 1. c; 2. e; 3. f; 4. a; 5. d

Critical Thinking

- Possible answer(s): (Para A) But they now believe a few dinosaurs were intelligent. (Para B) While some scientists think *Tyrannosaurus rex* was a powerful predator, others think the opposite is true. / It was too large to move very quickly, so it probably moved about as fast as an elephant. (Para C) Scientists believe pterosaurs were actually very heavy. So they probably could not take off from the ground like birds.

TEACHING NOTES

Before You Read

A. Discussion: Have students read the questions and answer these based on the timeline, and students' knowledge of the word *extinct*. If time allows, have students work in pairs and give them one minute to write as much as they can about dinosaurs. Check answers with the class.

B. Predicting: Remind students that scanning means looking over a text quickly to find specific information. Here, students should scan for the question headings and predict the answers. Check answers as a class.

- Question 1 could be answered yes or no; some scientists believe *T. rex* was a powerful predator, while others believe it was a scavenger. Use the context to elicit the meaning of *scavenger*.

Reading Comprehension

A. Multiple Choice: Elicit the meanings of *myth*, *descendants*. Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 4: *Them* refers to *dinosaurs*, a word that comes later in the sentence. Although

reference words usually can be traced to words that are mentioned before the reference word, sometimes the word comes after.

B. Matching: Have students find the pictures of the three animals and the paragraph where the information on that animal can be found. Have students work individually. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Supporting Examples**. To clarify this idea, write a simple sentence on the board, such as *This is the best school in the country*. Then ask students for supporting examples to prove that this is true. “The students are cool.” “The teachers are interesting.” Explain that supporting examples provide support in order to convince the reader of an argument. Then ask students to elaborate on these sentences, using *for example*, *like*, and *such as*.

A. Noticing: Have students complete activity A and then check answers in pairs. Elicit the meaning of *nonstop*.

B. Identifying: Have students complete activity B, and then check answers as a class.

C. Completion: Have students read the information in the box first and then complete the sentences. Explain the meaning of *series* and *walnut*. Have students compare answers with a partner.

Challenge: Have students write additional sentences using words that signal examples: *for example*, *like*, and *such as*. Have them write about everyday topics, such as food or movies, and share their sentences with the class.

Critical Thinking

► Allow students two to four minutes to find the theories in the text. Explain that there are more than three theories, but they should find the

ones that they find interesting. Have students circle the words that introduce the theories and then compare answers with a partner.

► Have students discuss what they think about the theories with a partner. Have them support their ideas with reasons and examples.

Challenge: Write the following question on the board: *Why do you think films such as Jurassic World appeal to audiences?* Have students discuss in pairs.

Vocabulary Practice

A. Definitions: This paragraph is about Scotland’s Loch Ness Monster. Have students read the paragraph in activity A. Then have them match the words in red with their definitions. Check answers as a class.

- *In reality* shows a contrast. The first statement is not true, while the second statement (after *in reality*) is true. For example: *Bob said the trip would take 10 minutes. In reality, it took an hour.*
- *Probably* means that something is likely or almost certain. *Probably not* means that it is not likely.
- Ask students if they have heard of the Loch Ness Monster. Show a map to locate Scotland, and look online for photographs that supposedly show the monster.

B. Completion: This paragraph is about ancient sea reptiles like *Dakosaurus*. Direct students’ attention to the photograph on page 97, and read the caption. Explain that the *plesiosaurus* was an early kind of plesiosaur. Have students read the paragraph in activity B and circle the correct vocabulary words. Then check answers by reading the paragraph aloud to the class.

C. Word Parts: Have students do activity C and then check answers with a partner. Point out that the suffixes refer to a person who does an action. Have students make a new sentence with each word and brainstorm other words that fit this pattern as well.

LESSON OVERVIEW

Target Vocabulary: *dig up, estimate, examine, length, mystery, opinion, perhaps, similar, solve, terrible*

Reading Passage Summary: In 1965, paleontologists discovered a mysterious pair of giant arms and claws in an area of the Gobi Desert. The paleontologists called this dinosaur *Deinocoelurus* [die-nuh-kai-rus], meaning “terrible hand.” There were different theories about what the dinosaur looked like. Recently, more bones have been discovered. Now, paleontologists believe that the *Deinocoelurus* looked like an ostrich, was 11 meters long, and weighed 6,000 kilograms. It had no teeth. It had a head like a horse, a long tail, and a rounded hump on its back. The long arms and claws might have been used for digging for food or pulling high branches.

Answer Key

Before You Read

- A. 1.** claws; **2.** fossils; **3.** humps
B. Students’ predictions will vary. What is unusual about this dinosaur are its huge “hands” and claws. It also had a hump on its back.

Reading Comprehension

- A. 1.** c; **2.** b (Para A and B); **3.** a (Para C);
4. c (Para C); **5.** b (Para D)
B. 1. D; **2.** B; **3.** A; **4.** C

Reading Skill

- A. 1.** c; **2.** a; **3.** b; **4.** d
B. 1. an area in Mongolia’s Gobi Desert;
2. terrible hand; **3.** a type of dinosaur that looked like a modern-day ostrich

Critical Thinking

Possible answer(s): Maybe it could store water and it was a way to stay hydrated.

Vocabulary Practice

- A. 1.** length; **2.** estimate; **3.** similar; **4.** Perhaps
B. 1. b; **2.** b; **3.** b; **4.** a; **5.** b; **6.** a
C. 1. ask for; **2.** express; **3.** different

TEACHING NOTES

Before You Read



A. Definitions: Have students read the caption and notice the words in bold, then complete the definitions. Check answers as a class.

B. Predicting: Have students work in pairs to discuss what they think is unusual. Encourage students to use the vocabulary in activity A.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: Point out that students can eliminate option “a” because the paleontologists are mentioned in paragraph A, and option “c” because paragraph A gives the exact length of the arms. The last sentence of paragraph B states that *recently*, more bones have been found that tell us about the dinosaur. This implies that option “b” must be the correct answer.
- Question 3: Point out that it says that the dinosaur had no teeth and its head looked like a horse’s. Because of this information in paragraph C, options “b” and “c” can be eliminated. Paragraph C states that the dinosaur was almost as big as a *T. rex*, so option “a” is correct.
- Question 4: In paragraph C, the phrase *most surprisingly* indicates the answer, option “c.”
- Question 5: There is no mention of Darla feeling jealous of other scientists, so we can infer that she means that she likes a bit of mystery and the possibility of imagining what the dinosaur might have looked like.

B. Matching: Have students read the statements and choose the correct paragraph for each. Encourage students to skim the text again and

to read topic sentences and look for key words as clues. It may be helpful to model the first paragraph as an example. Have students check answers in pairs, and then check with the class.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Finding Meaning (1)—Using Definitions**. Level 1 *Reading Explorer* teaches students three different ways of dealing with unfamiliar vocabulary. Explain that writers often define unfamiliar or technical words in context by clearly giving a definition or a synonym or by setting off a definition using punctuation. Ask for volunteers to read the green box aloud to the class. If students are interested in the grammatical terms, explain that when two noun phrases are placed side by side, it is referred to as an appositive. The last two example sentences are appositives, while the first example sentence is a relative clause.

A. Completion: Have students do activity A individually and then check answers in pairs. Check answers as a class. Ask students what clues they used to find the answer. Model this by explaining the first sentence: I guessed that it is “tyrant lizard” because *tyrannosaurus* sounds like “tyrant.” Knowing that *sauros* means “lizard” can be helpful to understand the names of other dinosaurs as well.

B. Scanning: Have students do activity B. Before beginning, elicit the strategy for answering the questions. Scan for the specific information in Reading B. Have students work individually and check answers in pairs. Then check answers as a class.

Challenge: Have students look through past readings to find other examples of definitions in a text. Compare answers in pairs.

Critical Thinking

Remind students that *speculating* means “guessing.” Have students read the question and look back at the image on page 98. Encourage students to think about what dinosaurs needed for survival and to review the information from Readings A and B. Check answers as a class.

Vocabulary Practice

A. Completion: This paragraph is about different types of pterosaur. Remind students that they also learned about pterosaurs in Reading A. Ask what they remember from that reading. Use the image on this page to explain the meaning of the word *wingspan*. If possible, show a picture of a crow as well. Have students complete the paragraph. Then check answers with the class. If possible, ask for volunteers to read the paragraph aloud.

B. Words in Context: Have students do activity B. Check answers as a class.

C. Collocations: Have students complete activity C individually and then compare answers in pairs.

- Elicit the meaning of a *popular opinion*. Note that two of these collocations include verbs (*ask for/express*) and two include adjectives (*popular/different*). If time allows, ask students to write sentences about the readings in this unit, using the collocations.

Video Summary: The earliest dinosaurs appeared around 245 million years ago, when most of the Earth was connected in a supercontinent, Pangaea. As dinosaurs adapted to live in different places, species differed greatly; they could be the size of a chicken, or they could be 59,000 kilograms. Around 66 million years ago, dinosaurs died out. The reason is still a mystery. However, dinosaurs haven't completely disappeared; some birds today are related to dinosaurs, and because we can learn from fossils, still more dinosaur species are yet to be discovered.

Key Vocabulary: *asteroid, carnivore, herbivore*

Answer Key

Before You Watch

A. 1. plants; **2.** other animals; **3.** a rock that travels through space

B. a; c; d

While You Watch

A. See **Before You Watch B.**

B. 1. a; **2.** b; **3.** b; **4.** b

Critical Thinking

- ▶ Possible answer(s): I would like to bring back the *Deinocheirus*, because I want to find out what the hump is really used for! I would be scared to get too close, but I would be interested to see something that enormous!
- ▶ Possible answer(s): I don't think it's a good idea to bring back dinosaurs because they may attack the wildlife we have today.

video. Have them compare their answers in pairs. Remind them that they will revisit this section after watching the video.

While You Watch

A. Gist: Play the video. Have students check their answers to the predicting activity in Before You Watch.

B. Multiple Choice: Have students read the questions before watching again and circle the best answer based on what they remember. Elicit or explain the meaning of *adapted*, *footprints*, *joined together*, *struck* (*fear and wonder*). Ask students if they remember or can guess how these words are used in the video. Then play the video again and have students check answers in pairs.

Critical Thinking

- ▶ Have students choose one dinosaur they would like to bring back and take notes on what they remember about the animal. Then have them look through the unit and find one or two more facts to add to their notes. Ask students to work in pairs to explain the reasons for their choice. Follow up with a class vote to see which dinosaur is the most popular in the class.
- ▶ Have students discuss with a partner whether or not they think it's a good idea to bring back dinosaurs. Have students support their ideas with reasons and examples.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TEACHING NOTES

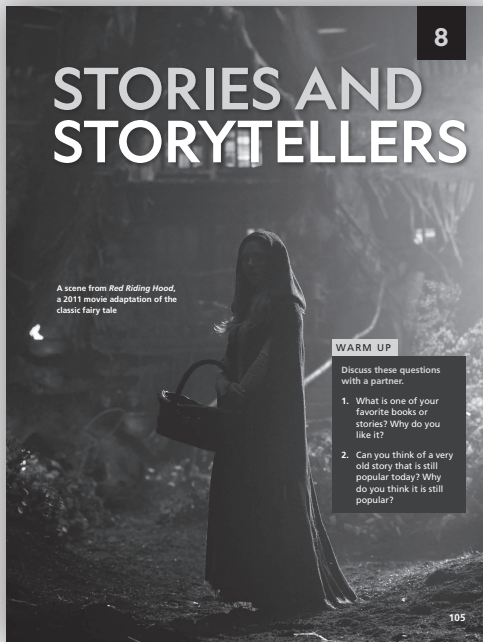
Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Have them complete the definitions and then check their answers with a partner.

B. Predicting: Have students read the topics and predict what they will learn about in the

STORIES AND STORYTELLERS

8



UNIT INTRODUCTION

This unit is about fairy tales and legends. In “The Brothers Grimm,” students read about two German brothers who collected folktales. In “The Seven Ravens,” students read the tale of seven brothers who turned into ravens. In the video, “Fairy-Tale Castle,” students learn about Neuschwanstein Castle, built by King Ludwig II of Bavaria, who loved legends. Students will also read about the *Kalevala* (a collection of poems from Finland), the tale of “Hansel and Gretel,” and a TV series called *4REAL*.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *4REAL TV series, Grimms’ fairy tales, J.R.R. Tolkien, Kalevala, Neuschwanstein Castle, rune singers, the Brothers Grimm, Viena Karelia*

WARM UP



Answer Key

Possible answer(s):

1. One of my favorite books is *The Giver* by Lois Lowry, about a future world that seems perfect at first, but isn’t. It falls to Jonas, a young boy, to change this world. I like this book because it’s very meaningful, yet easy to read.
2. “Beauty and the Beast” is still popular today because it teaches an important lesson about thinking beyond someone’s looks. Beauty falls in love with the Beast because of his personality.

TEACHING NOTES

This unit is about stories. “Little Red Riding Hood” is perhaps one of the best-known folktales and has many variations.

- Read aloud the Unit Title as students look at the photo. Elicit the meaning of *storyteller*, and ask students if they know any great storytellers. What makes their stories exciting?
- Read aloud the caption and explain the words *classic* and *adaptation*. Ask students if they can think of other adaptations of fairy tales.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *add, although, belief, collect, magical, primarily, publish, scary, suitable, text*

Reading Passage Summary: Jacob and Wilhelm Grimm became interested in folktales while at university. They started collecting the stories from all over Germany and found that these stories were similar to ones told across Europe. They published two books in German, and these included stories like “Cinderella” and “Snow White.” The stories include darkness and magic, and were based on traditional beliefs. Originally, these stories were not for children. Later, the Grimm brothers made the stories more suitable for children and added drawings as well. Like the early tales, the ones for children each have a moral.

Answer Key

Before You Read

A. Possible answer(s): They wrote fairy tales; they first wrote these for adults.

Reading Comprehension

A. 1. c; **2.** a; **3.** b (Para A); **4.** c; **5.** b (Para C)

B. Possible answer(s): **1.** “Cinderella,” “Snow White,” “Little Red Riding Hood”; **2.** “Hansel and Gretel”; **3.** They “softened” the tales and added drawings. **4.** work hard, be good, listen to your parents

Reading Skill

A. Answers will vary.

B. 1. storytellers; **2.** similar; **3.** dangerous; **4.** adults; **5.** children

Critical Thinking

Possible answer(s): The TV show *Once Upon a Time* retells classic fairy tales. In this show, the fairy-tale characters—including Snow White and her evil stepmother—are transported to modern-day United States! One interesting change is that the evil stepmother starts off as bad, but then you understand her story, and she becomes

good. The moral is that everyone has good inside of them and is capable of change.

Vocabulary Practice

- A. 1.** collection; **2.** magical; **3.** scary; **4.** Although; **5.** beliefs; **6.** published
B. 1. text; **2.** primarily; **3.** added; **4.** magical; **5.** suitable; **6.** beliefs; **7.** published
C. 1. music; **2.** magic; **3.** origin

TEACHING NOTES

Before You Read



A. Discussion: Have students look at the picture and the title. Note that the word order of the title is for stylistic reasons. In English, the family name would normally come before the noun *brothers* as in *the Grimm Brothers*. Have students read the questions and skim the reading quickly. Then have students discuss the questions in pairs.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Elicit the meanings of *evil*, *invented* (in question 3), and *witches*. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 4: A *moral* is a message about what is right or wrong.
- Question 5: Draw students’ attention to the word *like* in the last sentence of the reading, and elicit the meaning: The later stories are *similar* to the early stories. Thus, option “b” is correct.
- Students may be confused about the meaning of *dark* (in paragraph C). In this context, *dark* means sad, unpleasant, or evil.

Challenge: For students who have completed the multiple-choice activity, ask the following: *What is a popular fairy tale in your country? What is the moral of the story?*

B. Identifying Supporting Examples: Remind students that they learned about identifying supporting examples in the reading skill in Unit 7A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Have students work individually to write short answers. Then have them compare their answers in pairs.

- Question 3: Ask students what they think it means to "soften" a tale. Ask them to think of how a story might be "softened."

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Annotating Text (1)**. Level 1 *Reading Explorer* teaches students two different ways of annotating text. Elicit what the root word is for *annotate* (*note*) and explain that annotating is when you take notes on the same paper as the reading. Ask students why it is important to annotate: When students process a text using different modalities (marking it, reading it out loud, etc.), it is more likely that they will understand and retain (remember) the information. This is especially true for academic reading.

A. Annotating: Ask students to notice the ways that the reader has used the strategies in the green box to annotate the paragraph. Elicit from students why it is important to discriminate between really important information and minor details, so they do not highlight everything. Have students practice this by only marking a limited number of words in each paragraph. Have students annotate paragraphs B and C in Reading A. Then have students compare their annotations in pairs.

B. Summarizing: Give students one minute to look at their annotations and answer the questions individually. After answering the reading comprehension questions and annotating, this should be relatively simple for students. Give students a time limit to make it more challenging. Give them one minute to answer all of the

questions, based on their annotations. Then have them check answers as a class.

Challenge: Write the following task on the board for students who have completed the reading skill activities: *Find an early version of one of the Grimms' fairy tales (e.g., "Sleeping Beauty," "Snow White") on the Internet, and compare it with a more recent version. What are the similarities? What are the differences? As an adult, what aspects of the story do you find interesting?* Have students discuss in pairs.

Critical Thinking

Have students read the questions and then discuss their ideas in pairs. If time allows, have students note their ideas on paper together and then work with another group to compare the different movies or shows. Do they see any patterns in the changes that were made?

Vocabulary Practice

A. Completion: This passage is about a collection of poems called the *Kalevala*. Have students look at the picture and read the caption. Ask if they are familiar with *The Lord of the Rings*. Have students read the text and ask them what the *Kalevala* is. Point out that the vocabulary words are in red. Have students do activity A and then check answers with a partner.

B. Definitions: Have students complete activity B. Then have students check their answers with a partner. To check comprehension, ask: "What is a *suitable* amount of homework each night? When was this textbook *published*? What *magical* power would you like to have?"

C. Word Forms: Explain that the suffix *-al* changes some nouns to adjectives. Have the class add the suffix to: *tradition*, *culture*, *option*, and *season*. Ask students to use the suffix form in a sentence to show the meaning. Have students do activity C and then check answers with a partner. If time allows, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *affect, afraid, angry, determined, forget, immediately, moment, recognize, shocked, suddenly*

Reading Passage Summary: A couple with seven sons finally has a daughter. But when the boys are sent to fetch her water in the forest, the water jug falls in the well. Afraid to go home, they stay in the woods. Their angry father wishes that they were ravens, and they turn into ravens and fly away. When she is grown, their sister finds their house and unlocks the door by cutting off her finger. As she drinks, her parents' ring falls into a cup. She hides, and when one raven drinks from the cup and finds the ring, he wishes for his sister so that they could be free. She runs to them, and they turn back into humans.

Answer Key

Before You Read

- A. 1.** 8; **2.** to get water for their sister; **3.** The boys began to fight, and the water jug fell into the well. This made the boys scared to go home.
- B.** Possible answer(s): The boys will be turned into ravens. The girl will grow up and save her brothers.

Reading Comprehension

- A. 1.** b; **2.** a; **3.** b; **4.** c (Para C); **5.** b
- B. a.** 2; **b.** 7; **c.** 1; **d.** 4; **e.** 8; **f.** 5; **g.** 3; **h.** 6

Reading Skill

- A. 1.** Hansel and Gretel; **2.** stepmother; **3.** children; **4.** house; **5.** old woman; **6.** old woman / witch; **7.** children; **8.** oven
- B. 1.** her finger; **2.** seven plates and seven cups; **3.** the brothers and their sister

Critical Thinking

Possible answer(s): I would make the girl find out about her brothers in an interesting way. Maybe there can be a magical guide who tells her how to find her brothers. I would

definitely soften the story. Instead of cutting off her finger, maybe the girl can give up something precious that she owns, like an expensive watch.

Vocabulary Practice

- A. 1.** a; **2.** b; **3.** a; **4.** a; **5.** b; **6.** a
- B. 1.** determined; **2.** affect; **3.** forget
- C. 1.** affected; **2.** effect; **3.** affect

TEACHING NOTES

Before You Read

A. Discussion: Ask students to look at the photograph and read the title. Explain that the birds in the photograph are ravens. Have students read the questions first, and then give students one minute to read paragraph A. Have students answer the questions individually. Elicit the meaning of *water jug* and *well*. Then check answers with the class.

B. Predicting: Have students work in pairs to discuss what they think will happen next. To deter students from reading ahead, you might want to write the question on the board, and have students close their books as they speak. If time allows, have the pairs of students write their predictions and then check to see if they are correct after they read.

Reading Comprehension

A. Multiple Choice: Explain that *The Tale of the Seven Ravens* is a very famous story from the Brothers Grimm. Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 3: Encourage students to think about the situation. What does the father want? This context will help them understand the meaning. This will help them reach the correct answer, option "b."

- Question 5: There are different interpretations of what the story means, but the most common one is that you should be careful what you wish for because it just might happen. Ask students what they think the moral is.

B. Sequencing: Remind students that they learned about sequencing in the reading skill in Unit 6A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Point out to students that stories often have many events that happen. Then have students work individually to read paragraphs C and D again and put the events in the correct order. Check answers as a class. Have students practice telling the story to a partner with enthusiasm.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Understanding Pronoun Reference**. Explain that there are both subject and object pronouns. It can be helpful to create a list of these on the board, and then practice these example sentences: *Jane talked to Mike. She asked him about the homework.* On the board, draw arrows to show who *she* and *him* refer to. It is very useful to have students draw arrows to antecedents of pronouns (the noun to which the pronoun refers). Write other sentences: *Jane talked to Sally. She asked her about the homework.* Ask: If they have the same gender, how do we know who the reader is referring to? The answer is that it will depend on context. We know that *She* is Jane and *her* is Sally because in the sentence before, Jane is the subject of the sentence. Occasionally a pronoun will refer to a noun that follows it, and very rarely, the antecedent is implied. In addition, words such as *here* and *there* also refer to antecedents.

A. Matching: Have students look at activity A. Elicit the meaning of *stepmother*. Direct students' attention to the example. Have students read the paragraph and draw arrows individually. Check answers in pairs and then as a class.

B. Reference: Ask students to find the words or phrases that the pronouns refer to. Explain that they will have to read the sentences in Reading B in order to find the answers. Check answers as a class.

Critical Thinking

Read the questions aloud and allow students time to think of answers individually. Then have students discuss their ideas with a partner and write them down. Make a list of ideas on the board. Have students pretend that they are movie producers. Hold a vote for the ideas they like the best.

Vocabulary Practice

A. Words in Context: Have students do activity A and check answers with a partner. Explain that *immediately* and *suddenly* have slightly different meanings. If something happens *immediately*, it happens at the next moment, but a person might expect this to happen. When something happens *suddenly*, it is more of a surprise. Ask: "What do you like to do *immediately* after class? How would you feel if the teacher *suddenly* shouted at you?" (Elicit more vocabulary words as answers: *shocked*, *angry*, and *afraid*.)

B. Completion: This paragraph is about the TV show *4REAL*. Have students look at the picture and read the caption. Ask the following: *How do you think this photograph is connected to storytelling?* Have students read the paragraph to answer this. Then have students do activity B. Check answers as a class. Explain that when someone is *determined* to do something, they will work very hard. Ask: "What are you *determined* to do in your life?"

C. Word Usage: Read the explanation. Students might be interested to know that many native English speakers have trouble with these two words because they sound almost the same when spoken. Have students complete activity C individually and then compare answers in pairs. If time allows, have students write one sentence with *affect* and one sentence with *effect*.



Video Summary: In the 19th century, King Ludwig II of Bavaria loved to listen to stories and operas about knights and kings. He especially loved the operas of the German composer Richard Wagner. King Ludwig was shy. He built a new castle near his childhood home, far away from his busy court, in honor of Wagner. Parts of the castles were made to look like stage designs from the operas. Sadly, King Ludwig died before the castle was completed. However, it is now one of the most visited castles in Europe and was the inspiration for Disneyland's Sleeping Beauty Castle.

Key Vocabulary: *composer, court, opera*

Answer Key

Before You Watch

A. 1. b; 2. a; 3. c

While You Watch

A. a and c

B. 1. a; 2. b; 3. b; 4. a

Critical Thinking

Possible answer(s): I think the Harry Potter books will still be popular hundreds of years from now. The book's themes of family, friendship, and good vs. evil will continue to be relevant in the future. Also, it's fun to read stories about magic and the supernatural.

B. Multiple Choice: Have students read the questions before watching again and circle the best answer based on what they remember. Then play the video again and have students check answers in pairs.

- Question 1: Although the castle is far away from the court, the narrator states that the castle was "not far from his childhood home," so the answer is option "a."
- Question 2: Although Wagner's work inspired the castle, the paintings are of poets and kings, so the answer is option "b."
- Have students work in small groups to discuss what they found the most interesting or the most surprising about the video. Have volunteers share their ideas with the class.

Critical Thinking

Have students make a list of stories from the last 100 years that they think will still be popular hundreds of years from now. If students struggle with this question, remind them that movies are stories, too. Have students discuss in pairs and give reasons for their choices. Make a list on the board, and have students explain their reasons to the class. Then have a class vote on the story that students think will survive the longest.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Have them complete the activity and then check their answers in pairs.

While You Watch

A. Main Idea: Have the students read the three statements and then listen for the answers. Explain that the directions mention "reasons," so the answer can include more than one statement. Play the video. Have students check their answers in pairs.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

UNUSUAL JOBS

9



UNIT INTRODUCTION

This unit focuses on unusual and dangerous jobs. In “Meet the Meteorite Hunter,” students read an interview with a man who travels the world in search of meteorites. In “Smokejumpers,” students read about special firefighters who jump into hard-to-reach areas. In the video, “Snake Catchers,” students learn about scientists who catch Burmese pythons that live in the Everglades National Park, Florida. Students will also learn about hackers, upcyclers, and a volunteer firefighter.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Black Beauty* (Martian meteorite), *Burmese pythons*, *golf ball divers*, *meteorites*, *Michael Farmer*, *smokejumpers*, *the Croc Docs*, *upcycling*, *wildfires*

WARM UP

Answer Key

Possible answer(s):

1. window cleaners for skyscrapers, food tasters
2. I think it could be fun being a food taster. But I am scared of heights, so I definitely don't want to clean windows on skyscrapers!

TEACHING NOTES

Golf ball diving might sound like fun, but it isn't an easy job. Divers recover the golf balls that have been hit into ponds on golf courses, and then sell them back to the golf courses. Divers must be able to work in ponds where there is low visibility. In some places, alligators can also be a danger.

- Read aloud the Unit Title as students look at the photo. Ask students for synonyms for *unusual* (strange, different, odd), and ask if they would prefer a typical or an unusual job. Why?
- Read aloud the caption and explain the words *golf* and *pond*, using the photograph.
- Have students discuss the questions with a partner, and follow up with a class discussion. If students need help, list categories (e.g., science, leisure, food, technology). Make a list of unusual jobs on the board, and then have students vote on which jobs they would like to try.

LESSON OVERVIEW

Target Vocabulary: *collector, illegal, in demand, law, locate, preserve, treasure, valuable, weigh, worth*

Reading Passage Summary: Michael Farmer travels the world in search of meteorites. In this interview, he explains that this job can be dangerous. One of the best places to find meteorites is the Sahara Desert in Africa. One valuable meteorite that he found in Canada, a pallasite, was sold for almost a million dollars. He sells the meteorites to museums, private collectors, and scientists.

Answer Key

Before You Read

- A.** Possible answer(s): **1.** a space rock that lands on Earth; **2.** I think scientists are interested because they can learn more about outer space by studying the meteorites.
- B.** Possible answer(s): **1.** Michael Farmer is a meteorite hunter. He goes around the world to find meteorites. Then he sells them. **2.** He probably has to go to remote places to find the meteorites.

Reading Comprehension

- A. 1.** a; **2.** b (Para A); **3.** a (Para B); **4.** b (Para C); **5.** c
- B. 1.** the law; **2.** meteorite pieces; **3.** a pallasite; **4.** new meteorites; **5.** scientists

Reading Skill

- A.** Line 1: 200 or so; Line 2: One; Line 3: in 2011; Line 5: just over 300, around 2.1; Line 6: second-oldest; Line 8: over a year; Line 9: approximately 10 times
- B. 1.** about 70 or so; **2.** \$100,000; **3.** around 4.5 billion years old; **4.** 53 kilograms

Critical Thinking

Possible answer(s): I think meteorites should belong to museums or scientists, because we can learn a lot from their research. Maybe smaller pieces that are similar to ones that are already being studied could be sold to private collectors.

Vocabulary Practice

- A. 1.** in demand; **2.** illegal; **3.** law; **4.** valuable; **5.** worth; **6.** locate
- B. 1.** freeze; **2.** heavy; **3.** a set of gold coins; **4.** buys
- C. 1.** chest; **2.** buried; **3.** national

TEACHING NOTES

Before You Read



Meteorites are solid pieces of space debris that have landed on Earth. Most meteorites are stone, and about 5 percent are made of iron. Meteorites fall in many places on Earth, but it is easiest to find them when they are in sharp contrast with their surroundings, such as in Antarctica or in a desert.

A. Discussion: Direct students' attention to the photograph and ask if they have seen a meteor before. Allow students time to read the paragraph independently and answer the questions in pairs. Point out that question 2 is an inference question. Ask students if they can connect this to what they read about space in Unit 4. Then check answers with the class.

B. Skimming: Point out the genre of the reading passage (an *interview*) and ask about its features. The *interviewer* asks questions, and the *interviewee* responds. Set a one-minute time limit for students to skim and answer. Check answers as a class.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 3: Before they answer this question, explain that in this context, *spot* means "see."

Challenge: Write the following task on the board: *Use the Internet search words "meteorites for sale," and look at the types of meteorites and their prices. Do you think most are being sold by professional meteorite hunters? Why or why not?* Have students discuss in pairs.

B. Understanding Pronoun Reference: Remind students that they learned about understanding pronoun reference in the reading skill in Unit 8B. If necessary, have students turn back to that section of the Student's Book and review this skill again. For question 3, note that there are a lot of instances of the pronoun *it*, so students should work backwards in order to find the references. Have students answer all the questions individually. If possible, write the sentences on the board for students to draw arrows to the information. Then check answers as a class.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Identifying Exact vs. Approximate Numbers**. In addition to the word clues that signal approximate numbers given in the text box, remind students that often the phrases *more than* and *less than* are used to describe non-exact numbers.

A. Identifying: Remind students about annotating a text. Numbers can be very important to annotate. First, direct students' attention to the photograph and read the caption. Then have students read the text. What do they remember about "Black Beauty"? Give them one minute to talk to a partner. Then have them circle the exact numbers and underline the approximate numbers. Check answers with the class and make a T-chart on the board with exact and approximate numbers.

B. Short Answer: Ask students to read the questions and see if they can remember any answers without looking back at the text. Then

have students scan the reading for the correct answers. Have students complete the questions individually and then check answers as a class.

Challenge: Ask students to look through the textbook and find other readings with numbers. Then have them work in pairs to write questions. They should write the page number of the reading, and then write the questions and the answers. Have students read their questions aloud for the class to answer.

Critical Thinking

Have students read the questions and check one of the options. Review opinion language and modal verbs such as *should/shouldn't* and *have to/don't have to* on the board. Have students discuss with a partner. Then have students note their ideas and discuss with a larger group or the class.

Vocabulary Practice

A. Completion: This passage describes some unusual jobs that can pay well. Have students do activity A and then check answers with a partner. Ask students if they would prefer to be a hacker (the legal kind) or an upcycler, and why. To check comprehension, ask students: "What can happen if you do something *illegal*? What is one piece of *valuable* advice? What is something that is *worth* a lot of money?"

B. Words in Context: Have students do activity B. Check answers as a class. To check comprehension, ask: "Is it polite to ask people how much they *weigh*? Do you know anyone who is a *collector*? What do they collect?"

C. Collocations: Have students do activity C and then check answers with a partner. Elicit or explain the meaning of *archeologist*, *buried*, *chest*, *coin*, *hunt*, *panda*, and *pirate*. If time permits, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *capable, destroy, employ, equipment, height, limited, majority, middle, occupation, race*

Reading Passage Summary: Smokejumpers are special firefighters who jump from airplanes or helicopters into areas where wildfires are burning. They assess the situation and try to stop the fire from spreading further until other firefighters arrive. They clear the land of material that will burn. Most smokejumpers are men, but more women are starting to join. It's a dangerous and exhausting job, but smokejumpers love the thrill.

Answer Key

Before You Read

- A. 1.** burn; **2.** hectare; **3.** wildfire
B. Possible answer(s): They jump from planes into areas where there's a fire that no one else can reach. They try to stop the spread of the fire by cutting down the trees around it.

Reading Comprehension

- A. 1.** b; **2.** c (Para B); **3.** a (Para C); **4.** c; **5.** b (Para D)
B. Possible answer(s): **1.** shovels and axes (Para B); **2.** burnable material, like dry grass and dead trees (Para B); **3.** how to find food in the forest or make simple furniture from trees (Para C)

Reading Skill

- A.** How smokejumpers fight fires (Para B); What a smokejumper is (Para A); Why people like being smokejumpers (Para D); Requirements to be a smokejumper (Para C)
B. Possible answer(s):
 Para A—special firefighter/jump into hard-to-reach areas;
 Para B—examine land/main goal to slow progress of fire/use basic equipment;
 Para C—mostly men, but more women now/height and weight important factors/need to be able to survive in the wilderness;
 Para D—good job for “tough guys”

Critical Thinking

- Answers will vary.
 ► Possible answer(s): **1.** a circus performer; They like to travel and do thrilling stunts. **2.** a war journalist; They want to show the world what is really happening in war zones. **3.** a window cleaner for a high-rise building; They like heights, and they get to see a city in a unique way.

Vocabulary Practice

- A. 1.** employed; **2.** race; **3.** occupation; **4.** equipment; **5.** capable; **6.** majority
B. 1. a; **2.** b; **3.** b; **4.** a
C. 1. improve; **2.** equip; **3.** employ

TEACHING NOTES

Wildfires can start naturally through lightning strikes, or they can be man-made. To stop a fire, smokejumpers must remove any fuel in the path of the fire. Sometimes they clear the trees away in *firebreaks*. Other times they start *backfires*, which are intentional fires that they can control.

Before You Read



A. Definitions: Have students read the caption and then match the vocabulary words in yellow with the definitions. Check answers as a class.

B. Predicting: Allow students time to read the questions and the introduction. Have students discuss their ideas in pairs. Encourage students to use their background knowledge and their own imaginations to answer this question. Compare answers as a class.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: *Examine* means “study” in this context, so option “c” is the correct answer.
- Question 3: Paragraph C states that although the smokejumpers are usually men, more women are starting to join now. This eliminates option “b.” There is no mention of university degrees in the reading, so this eliminates option “c.” The reading states that height and weight are important, so option “a” is the correct answer.
- Question 4: Paragraph A explains that smokejumpers go to hard-to-reach places. Paragraph C states that smokejumpers need to be able to survive in the wilderness. There is no mention of the salary, so option “c” is the correct answer.
- Question 5: We can infer that jumping out of planes and surviving under dangerous conditions would be exciting, so option “b” is the correct answer.

B. Short Answer: Ask students to read the questions and work in pairs to see if they can remember any of the answers without looking back at the text. Then have students scan the reading for the correct answers. Have students complete the questions individually and then check answers as a class.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Annotating Text (2)**. Remind students that they have already learned about this concept. Ask students if they already use the technique of writing the main ideas and key points in the margin. Elicit why it might be useful: This can help them pay attention to the details as they read, becoming “active” readers. It will help them to understand every paragraph. These notes will also be useful for future review.

A. Main Idea: Have students do activity A. Check answers as a class.

B. Annotating: Point out that the wording of key points can change from person to person. Explain that when annotating, students don’t need to write full sentences. If necessary, model the first example on the board as a class. Have students do activity B. Check answers as a class.

Critical Thinking

- Explain to students that they will rank the jobs. Make sure that students understand what each job is.
- Have students choose three of the jobs listed. Allow students one or two minutes to write their reasons individually. Then have students compare answers with a partner. On the board, make lists of the jobs and reasons.

Vocabulary Practice

A. Completion: This passage describes a young man’s experience as a volunteer firefighter. Explain *flight paramedic*. Then have students do activity A. Have students check their answers with a partner. Ask students if they would like this job. To check comprehension, ask: “What do you spend the *majority* of your time doing? What *equipment* do photographers need? What is one *occupation* that you would be *capable* of doing?”

B. Words in Context: Have students do activity B. Check answers as a class.

- Question 1: Explain that *in short supply* means there is not a lot of that item. *More than enough* means that there is a lot, or more than is needed.

C. Word Forms: Have students complete activity C individually and then compare answers in pairs. Give students additional practice by listing: *enjoy*, *appoint*, *develop*. Ask students to make these verbs into nouns by adding *-ment* and then make a new sentence with each word.

Video Summary: Skip Snow and Mike Rochford are snake catchers in the Everglades National Park in Florida. They catch Burmese pythons, snakes that are not native to the area and are harming the local wildlife. The men catch the snakes and release them far from where they were caught. Using tracking devices, they are able to see where the snakes go. When they can't track them using antennae on the ground, they use a plane with a strong antenna to track the snakes. They find that the snakes have traveled over 56 km back to where they were caught.

Key Vocabulary: *antenna, invasive, native, swamp*

Answer Key

Before You Watch

A. 1. is not; harmful; 2. were born; 3. wet and soft; 4. send and receive radio or television signals

While You Watch

A. 1. reptiles; 2. 7; 3. 90; 4. 1.5

B. 1. a; 2. b; 3. b

Critical Thinking

Possible answer(s): golf ball divers, meteorite hunters, smokejumpers, hackers, upcyclers, circus performers, war journalists, private detectives, ski instructors, window cleaners working on high-rises, volunteer firefighters, snake catchers. Answers will vary for jobs that students are interested in or best suited for. Example answer: I would like to be an upcycler because I like being creative and I want to help the environment.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to look at the picture and read the caption. Ask if anyone has seen a large snake before. Then have students read the

information and think about the meaning of the words in bold. Explain the meaning of *dumped* and *tracking devices*. Have students complete the definitions, then check answers as a class. Ask students what they think the video will be about. What do they expect to see?

While You Watch

A. Completion: Have students read the notes.

Elicit the meaning of *get rid of*, *giving up*, *harmless*, *mammals*, and *signal*. Explain that *m* is the abbreviation for *meters*, and *kg* is the abbreviation for *kilograms*. Play the video. Have students check answers in pairs, and then check answers as a class. Ask students if they were surprised by any of the statements.

B. Multiple Choice: Have students try to answer the questions before watching again. Then play the video again and have students check answers in pairs.

Critical Thinking

Have students look through the book for jobs. Explain that *to be suited for a job* means that a person would be good at doing this job. Give students time to write which of these jobs they think they would be suited for and why. Then have students discuss their answers in pairs. If time allows, make a list on the board and see which jobs are the most popular in the class.

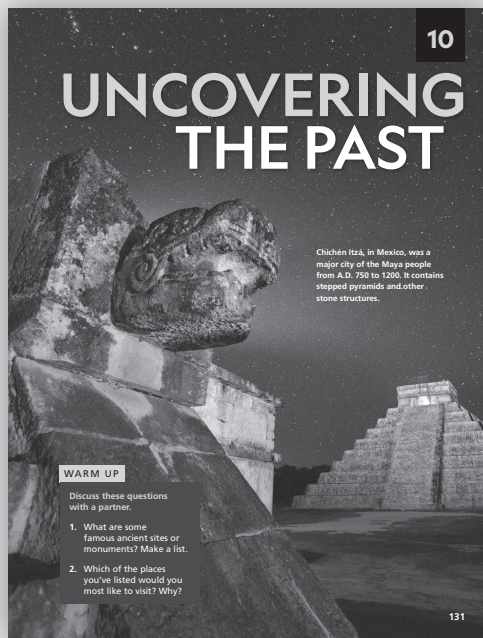
Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

UNCOVERING THE PAST

10



UNIT INTRODUCTION

This unit focuses on past civilizations. In “The Army’s True Colors,” students read about terracotta soldiers constructed to protect the tomb of the first emperor of China. In “Wonders of Egypt,” students read about the men and women who built the pyramids of Giza, in Egypt. In the video, “City in the Clouds,” students learn about the ancient Inca city of Machu Picchu, in Peru. Students will also read about Cleopatra, queen of Egypt.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Chichén Itzá, clay army of Xi’an, Cleopatra, Egyptian pyramids, Emperor Qin Shihuang’s tomb, Machu Picchu, New7Wonders*

WARM UP

Answer Key

Possible answer(s):

1. the Parthenon; the Coliseum; the Pyramids; Teotihuacan; Machu Picchu; the terracotta soldiers
2. Answers will vary.

TEACHING NOTES

Chichén Itzá, the site of one of the largest Mayan cities, is one of the most visited archeological sites in Mexico. It is a UNESCO World Heritage Site. The Kukulcan Pyramid in Chichén Itzá was chosen to be one of the new seven wonders of the world in a poll in 2007.

- Read aloud the Unit Title as students look at the photo. Ask students what *uncovering* means and what this unit might be about.
- Read aloud the caption and explain the phrases *stepped pyramids* and *stone structures* by pointing to these in the photograph. Ask students what they know about the Maya people.
- Have students discuss the questions with a partner, and follow up with a class discussion. Display a map of the world and have students think of famous places that they know, using the map. Elicit the grammar needed for the discussion: *I’d most like to visit X because Y*. Make a list of the places on the board. Have students vote on which place they would most like to visit.

LESSON OVERVIEW

Target Vocabulary: *apply, army, construction, currency, last, liquid, network, protect, reveal, technique*

Reading Passage Summary: The first emperor of China, Qin Shihuang, was famous for many innovations. He ordered the construction of an army of life-sized painted terracotta soldiers to guard his tomb. When the soldiers were unearthed, the outside air almost immediately caused the coating under the paint to fall off. Archeologists have recently discovered a new area with soldiers, and researchers have developed a liquid that they can spray on these soldiers in order to help preserve the colors. The dirt around the soldiers also contains paint, which can provide valuable information to archeologists trying to find a way to apply colors to the army again.

Answer Key

Before You Read

- A. 1.** Archeologists; artifacts; **2.** tomb; **3.** warrior
B. Possible answer(s): The colors faded over time; when outside air hit the colors, it caused the coating underneath the paint to fall off.

Reading Comprehension

- A. 1.** b; **2.** a; **3.** b; **4.** a (Para C); **5.** c (Para D)
B. 1. emperor; **2.** tomb; **3.** army; **4.** brown; **5.** liquid; **6.** plastic

Reading Skill

- A. 1.** b; **2.** a; **3.** a; **4.** b; **5.** a

Critical Thinking

Possible answer(s): **Pros:** more tourists might come to visit; people can see what the army originally looked like; it would show how different the soldiers originally looked from one another. **Cons:** paint might make the warriors disintegrate; current artists may not be able to match the original colors.

Vocabulary Practice

- A. 1.** constructed; **2.** protect; **3.** techniques; **4.** army; **5.** revealed; **6.** liquid; **7.** network
B. 1. a; **2.** b; **3.** a
C. 1. a secret; **2.** the truth; **3.** the cause

TEACHING NOTES

The Mausoleum of the First Qin [chin] Emperor is a cultural World Heritage Site because the terracotta figures give people today a unique window into life in China 2,200 years ago. Since each figure is unique, they tell us about the diversity of the population when China became a unified country for the first time. It appears that people of many different ethnic or native groups are represented in the huge “army” of statues. The figures also give information about warfare in 200 B.C. including horses, chariots—carts for soldiers to ride in—and weapons. The emperor’s enemies set fire to his tomb a few years after he died. Although the wooden structures burned, the terracotta statues have survived for 22 centuries, albeit not with their original colors.

Before You Read



A. Definitions: Direct students’ attention to the photograph and ask if they have heard of these warriors. Allow students time to read the caption independently and match the words in bold to their definitions. Then check answers with the class.

B. Predicting: Have students look at the photograph on page 134 and then discuss their ideas in pairs. Check answers after students read.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Note on dates: Traditionally, historians have used B.C. to count the years before the birth of Christ and A.D. for the time after. Because B.C. dates count down, 210 B.C. is more recent than 221 B.C.
- Question 3: Elicit from students that the root of the word is *earth*, and the prefix *un* means “not.” Therefore, we can guess that *unearth* means to get rid of the earth, i.e., *dig up*.

- Question 5: Elicit the meaning of *restore*. Option “a” can be eliminated because it is false. Option “b” can be eliminated because there is no mention of changing the colors. Paragraph D mentions treating the earth as an artifact in order to study the colors, so the correct answer is option “c.”

Challenge: Write the following task on the board: *What do you think the farmers thought when they found the first terracotta figures? Imagine a conversation between two farmers and try it with a partner.* Have students act out their conversations in pairs.

B. Summarizing: Remind students that they learned about summarizing with a concept map in the reading skill in Unit 4A. If necessary, have students turn back to that section of the Student’s Book and review this skill again. Have students work individually to complete the concept map. Encourage students to read the passage again to find the information. Then have them compare their answers in pairs.

- Question 3: Explain that an *army* is an organized military force prepared to fight on land. A *soldier* is an individual member of an army. For this question, *army* is the correct answer because it is talking about the soldiers as a group.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Finding Meaning (2)—Identifying Homonyms**. Remind students that they have already learned about this concept. Point out that English words can have multiple meanings, and can also be different parts of speech. Elicit that this is why it is important to think about the context. An electronic dictionary is literal and not sensitive to these meanings, so students need to make the distinctions themselves.

A. Definitions: Have students decide on the correct meaning of the word in bold, based on the context. Explain that both definitions are correct,

but that only one is correct in the context of the sentence. If necessary, complete the first item as a class. Have students work in pairs. Then check answers with the class.

Challenge: Ask students to find other homonyms in a dictionary or online. Then ask students to work in pairs to create sentences similar to the ones in activity A. Have students swap questions with another pair and decide on which is the correct meaning of each word.

Critical Thinking

Have students read the questions. If necessary, review opinion language and modal verbs such as *should/shouldn’t* and *have to/don’t have to*, so that students can use this language in their responses. Have students discuss with a partner and note their ideas. Then discuss as a class.

Vocabulary Practice

A. Completion: This passage gives information about Emperor Qin’s tomb. Have students do activity A and then check answers with a partner. To check comprehension, ask students: “Have any new buildings been *constructed* near our school? What do governments usually want to *protect*? What *techniques* make photographs look interesting?”

B. Words in Context: Have students do activity B. Check answers as a class. To check comprehension, ask: “How long does this class *last*? What *currency* do we use in this country?”

C. Collocations: Explain that when you *reveal* something, you make known something that has been hidden or kept secret. Therefore, you can *reveal information* that people were unaware of, or you can *reveal the contents* of a document that was a secret until that point. Have students do activity C and then check answers with a partner. If time permits, have students make a new sentence with each collocation.

LESSON OVERVIEW

Target Vocabulary: *according to, block, compete, confirm, icon, involved, ordinary, proud, role, task*

Reading Passage Summary: Archeologists have recently discovered a city near the pyramids of Giza. By studying this city and a nearby cemetery, archeologists can ascertain that ordinary Egyptians, not slaves or aliens, built the pyramids. Construction took about 80 years, and about 20,000–30,000 people were involved. Workers had different jobs and worked in teams. Life was hard for both male and female workers; life expectancy was 40–45 years for men, and 30–35 years for women. However, workers got food and medical care; and based on graffiti, it seems that the workers were proud of their work.

Answer Key

Before You Read

A. 1. T; 2. T; 3. T

B. c

Reading Comprehension

A. 1. a; 2. a; 3. c; 4. b; 5. b (Para D)

B. 1. F (about 80 years); 2. NG; 3. T (Para B); 4. T (Para C)

Reading Skill

A. 1. ordinary Egyptians; 2. 80 years; 3. teams and roles; 4. arthritis; 5. 30–35 years; 6. medical care; 7. proud; 8. national project

Critical Thinking

Possible answer(s): The author thinks the pyramid builders had mostly positive feelings about their work because he/she stresses that even though the work was hard, the workers had enough food and received medical care. Also, paragraph D is about how proud the workers were. They wrote *Friends of Khufu* on a wall, and the quote from Zahi Hawass emphasizes that the workers were proud to be part of a national project.

Vocabulary Practice

A. 1. competed; 2. According to; 3. role; 4. task; 5. proud; 6. icon

B. 1. ordinary; 2. task; 3. confirmed; 4. block; 5. involved

C. 1. impossible; 2. complete; 3. give

TEACHING NOTES

The pyramids at Giza [gee-za] are located near Cairo, Egypt, across the Nile River. The three main pyramids are part of a *necropolis*, meaning “city of the dead,” because kings, called *pharaohs*, were buried there 4,500 years ago. The ancient Egyptians believed that their rulers were godlike. They believed that after death, the spirits of the kings would climb the pyramids to the sun in the sky.

Before You Read

A. Quiz: Have students read the sentences and guess the answers. Remind the students that the caption about Chichén Itzá is on page 131. Explain that the answers are at the end of the unit on page 144. Have students compare answers in pairs. Ask if they were surprised by any of the information.

B. Skimming: Allow students one minute to read the question, the caption, and the passage. Remind them that this means they won’t have time to read every word. Have students answer the question and then read the passage in more detail.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and answer the questions. Alternatively, play the audio and have students read along. Elicit the meanings of *bones*, *for sure*, *skeleton*, and *tougher*. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 1: Point out that this answer is connected to the answer to the skimming question in Before You Read (page 138).

- Question 2: Read the topic sentence of this paragraph aloud to students: *Life for these workers was hard*. The paragraph is generally about the lives of both male and female workers.
- Question 3: Point out that the term *female workers* is not used in the paragraph, but readers can infer that *their lives* refers to female workers, because the sentence before talks about female skeletons.

B. Evaluating Statements: Ask students to read the questions and work in pairs to see if they can remember any of the answers without looking back at the text. Then have students read again to find the correct answers. Have students complete the questions individually and then check answers as a class.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Creating an Outline Summary**. This skill requires that students identify the main points in the reading as a whole as well as in the different sections or paragraphs. Remind students that each paragraph will usually present a new main idea (mentioned in the topic sentence) and will be supported with several details or examples. Outline summaries demonstrate that readers comprehend the main points of a passage and can distinguish between them and the supporting details. Summaries will start with the more general information about a topic, and then the information will be indented as it becomes more specific. Elicit that this allows readers to scan the information quickly when they use it to review for a test or to write a paper. Direct students' attention to the outline in activity A as an example.

A. Outlining: Have students do activity A. Explain that they should complete the outline using the words and phrases above the outline. If necessary, model the first item with the class. Elicit the meaning of *attitude* in section 2c. Check answers as a class.

Critical Thinking

Point out that all authors have biases or personal opinions. Have students reread paragraphs C and D. What is the bias of this writer? Have students read the questions, discuss their answers in pairs, and write their ideas. Then discuss ideas with the class. Ask students how another author might describe the same situation differently.

Vocabulary Practice

A. Completion: This passage is about Cleopatra, the last queen of Egypt. Ask students what they know about Cleopatra. Have students skim the reading. Explain the meaning of *regained*. Then have students do activity A. Have students check their answers with a partner. To check comprehension of the vocabulary words, ask: "Do you *compete* in any competitions? Who plays an important *role* in your life? Who is an example of a movie *icon*?"

- The reading has many common collocations. Ask students to circle them and then compare notes. Some examples are: *competed for control*, *according to legend*, *played an important role*, *not an easy task*, and *too proud*. Have students use the collocations in other sentences.

B. Definitions: Have students do activity B. Check answers as a class. To check comprehension of the vocabulary words, ask: "What *tasks* do you need to do on an *ordinary* Monday morning? Are you *involved* in any clubs or sports?"

- Question 4: Point out that the word *block* is a homonym. We can talk about a block of time, especially in school. A city block is one area between two cross streets. Blocking someone from social media sites means that they cannot communicate with you.

C. Collocations: Explain to students that a *task* is an activity or piece of work that you have to do. In a typical *Reading Explorer* lesson, students *complete* a number of *tasks* in each section. Have students complete activity C individually and then compare answers in pairs. Explain that a *simple* task is an easy task. If time permits, have students make a new sentence with each word.

Video Summary: Machu Picchu, built over 500 years ago by the Inca people, is one of the best-preserved archeological sites in Peru. The Inca empire once stretched from modern-day Ecuador to Chile. Machu Picchu has palaces, plazas, and temples, all built without wheels or metal tools. The Inca people constructed the buildings to withstand earthquakes, which happen frequently in the area. Local communities knew about Machu Picchu for centuries, but it only became famous worldwide after a local farmer showed Yale professor Hiram Bingham the site in 1911.

Key Vocabulary: *aspect, empire, engineering, ruins*

Answer Key

Before You Watch

A. 1. empire; 2. aspect; 3. ruins; 4. engineering

While You Watch

A. 1. 500; 2. stone; 3. metal; 4. earthquakes;
5. farmer; 6. 2007

Critical Thinking

- ▶ Possible answer(s): It depends. I think that it's OK for some artifacts to be in museums to educate more people about the historical sites. However, I think that most artifacts found today should be left at their original sites or at least be looked after by experts in that country.
- ▶ Answers will vary.

Have students check answers in pairs. Then check answers as a class. Ask students if they were surprised by anything they learned.

Critical Thinking

- ▶ Have students think about the questions and then discuss their answers in pairs. If appropriate, encourage students to use their own background knowledge to answer this question. This question can also begin a discussion about collecting artifacts versus studying them scientifically. Compare ideas with the class.
 - In recent years, the number of visitors to Machu Picchu has been restricted because there are too many tourists and this damages the site. Have students role-play a scenario where one student is a tour guide who wants more tourists to be allowed to enter the site, and another student is an archeologist who thinks that only a few people should be allowed to enter each day.
 - Ask students what a UNESCO World Heritage Site is, and if they know of any others. Have students search online for other sites and discuss these with the class.
- ▶ Have students look back at their answer to the Critical Thinking question on page 122 where they also practiced justifying an opinion. Have students discuss the reasons for their opinions with a partner. Elicit answers as a class.

TEACHING NOTES

Before You Watch

A. Previewing: Have students look at the photo and read the paragraph. Elicit the meaning of *grand, impressive, palaces, plaza, temples, and well planned*. Then ask students what they think the video will be about.

While You Watch

A. Completion: Point out to students that this is another example of creating an outline summary. Have students read the notes. Elicit the meaning of *best-preserved* and *massive*. Play the video.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

PLASTIC PLANET



UNIT INTRODUCTION

This unit discusses pollution caused by plastic. In “The Problem with Plastic,” students read about the problem of plastic in the world’s oceans, and the danger it poses to sea animals. In “Five Tips for Using Less Plastic,” students read about various ways everyone can reduce the amount of plastic waste in the environment. In the video, “Our Plastic World,” students learn about the difference between synthetic plastics and bioplastics, and some alternatives to plastic products. Students also read about the Owl Rescue Centre in South Africa, and how the country of Wales is reducing plastic waste.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *bioplastics, Matthew Savoca, Owl Rescue Centre, sea turtle straw rescue, single-use plastics, tips for reducing plastic consumption, Wales plastic bags*

WARM UP

Answer Key

Possible answer(s):

1. I think global warming, air pollution, and the disappearance of the bee population are some of the most important issues facing the environment today.
2. I live near the ocean, so my community organizes a beach clean-up day a few times a year. There is also a move to recycle materials and compost food to cut down on waste.

that between 5.3 million and 14 million tons of unrecycled plastic waste ends up in the ocean every year. She says to imagine five plastic grocery bags, stuffed with plastic trash, placed on every foot of coastline around the world. That would be 8.8 million tons of trash.

- Read aloud the Unit Title as students look at the photo. Ask students what they think the title means.
- Read aloud the caption and explain the word *trash*.
- Have students discuss the questions with a partner. Follow up with a class discussion.

TEACHING NOTES

Plastic in the ocean is a serious problem. In 2015, engineering professor Jenna Jambeck estimated

LESSON OVERVIEW

Target Vocabulary: *common, confusing, constant, extract, huge, long term, recycle, rescue, typically, weak*

Reading Passage Summary: Since 2000, there's been a huge increase in worldwide plastic production, but we recycle less than one-fifth of it. Almost 40 percent of plastic is produced for packaging. When this is thrown away, it can take hundreds of years to break down and can cause problems, especially for the world's oceans. Sea animals that eat plastic experience constant hunger. If sea animals eat sharp pieces of plastic, it can even kill them. About 700 sea species are known to have eaten or have been caught in single-use plastics, such as straws and plastic bags.

Answer Key

Before You Read

- A. 1.** Possible answer(s): building, packaging, industrial machinery, textiles; almost 40 percent; **2.** 448 million tons; **3.** building and construction—35 years; packaging—less than six months
B. Possible answer(s): Sea animals could eat or get caught in the plastic.

Reading Comprehension

- A. 1.** c; **2.** b; **3.** a; **4.** b (Para D); **5.** b (Para C)
B. 1. T (Para B); **2.** F (Para B); **3.** NG; **4.** F (Para D); **5.** NG

Reading Skill

- A.** *"Imagine you ate lunch and then just felt weak ... and hungry all day," says marine biologist Matthew Savoca. "That would be very confusing."*
According to Savoca, "Single-use plastics are the worst."
"I think we'll know the answers in 5 to 10 years' time," says Debra Lee Magadini from Columbia University.

Possible answer(s): The first and second quotes support the statements in the reading. The third quote gives expert evidence.

- B. 1.** b; **2.** a; **3.** c; **4.** a

Critical Thinking

Possible answer(s): Ocean plastic could affect people who eat seafood, because they could be eating the plastic that the sea animals ate. It is also unpleasant to swim in plastic, or to see trash in the water. More importantly, the plastic could make certain sea creatures extinct or endangered, which could affect all of us. It's hard to know how the delicate balance of the ecosystem works, but plastic can't be good for it.

Vocabulary Practice

- A. 1.** Rescue; **2.** recycle; **3.** common; **4.** huge
B. 1. take it out; **2.** usually happens; **3.** strong; **4.** difficult; **5.** all; **6.** continue far into the future
C. 1. extend; **2.** except; **3.** extract

TEACHING NOTES

Before You Read



A. Understanding Charts and Graphs: Remind students that they learned about charts and graphs in the reading skill in Unit 5A. If necessary, have students turn back to that section of the Student's Book and review this skill again. Direct students' attention to the infographics. Elicit strategies for how to read charts and graphs. Elicit the meaning of *century*, *consumer products*, *packaging*, and *textiles*. Have students answer the questions individually. Then check answers as a class. Ask students what surprised them about the information.

B. Predicting: Remind students that predicting means guessing what a reading will be about. Allow students time to write answers and then discuss with a partner. Check answers as a class after students read the passage.

Reading Comprehension

A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: Note that the straw was the cause of the turtle's pain, and the reading states that this took place near Costa Rica, so options "a" and "c" can be eliminated. There is no mention of the tools the scientists used, so option "b" is the correct answer.
- Question 4: Elicit the meaning of *comb*. Point out that it's more common to use a toothbrush and a comb more than one time, but forks for fast food are usually single-use items.
- Question 5: Direct students' attention to the last sentence of paragraph C to find this answer. The other two options include the word *think*, so these are less certain than option "b."

Challenge: Write the following questions on the board: *How often do you use single-use plastics? Why do you think these are so commonly used?* Have students discuss in pairs.

B. Evaluating Statements: Have students answer the questions individually. Encourage them to scan the text to find the answers. Have students check answers in pairs and correct the false statements.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Understanding a Writer's Use of Quotes**. Explain that a source is a person who makes a statement. Writers use quotation marks to show another person's exact words. To illustrate this, ask a volunteer what they like to eat for lunch and why they like that food. Put the exact words in quotes

on the board. Elicit the meaning of *expert evidence* and *memorable phrase*.

A. Scanning: Have students underline the quotes in the reading. In pairs, have them discuss why the writer included them. Refer students to the green box for possible reasons.

B. Identifying Purpose: Have students read the quotes and then match these to the reasons. Point out that one option is used twice. Elicit the meanings of *float*, *patch*, *rely*, and *surface*. Explain that in the United States, middle school is for children approximately 10 to 14 years old.

Challenge: Ask students to choose one of the other readings that they have completed in class, and find quotes. Have them work in pairs and then share the reasons for those quotes with the class.

Critical Thinking

Have students read the question and discuss with a partner. Refer students to quote number 4 in Reading Skill activity B. Have students note their ideas and then discuss with a larger group or the class.

Vocabulary Practice

A. Completion: This paragraph describes how the Owl Rescue Centre in South Africa is helping to protect the environment. Direct students' attention to the photo of the owl house. Elicit the meaning of *ensure*, *increasingly*, and *used* (as an adjective). Have students do activity A. Then check answers by asking a volunteer to read the completed paragraph aloud.

B. Words in Context: Have students do activity B. Check answers as a class. To check comprehension, ask: "What time do you *typically* wake up? What is a *constant* source of happiness for you? What are your *long-term* goals?"

C. Word Parts: Have students do activity C and check answers with a partner. If time permits, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *avoid, ban, container, customer, globally, pollute, quit, reduce, refund, tax*

Reading Passage Summary: While scientists work to make plastic more biodegradable, there are ways that all of us can help reduce plastic waste right now. First, stop using plastic bags by bringing your own bags when shopping. Next, don't use plastic straws; instead, bring a reusable straw. Buy a reusable bottle and fill this yourself. Avoid plastic packaging. And finally, recycle plastic bottles. In order to reduce plastic consumption, many countries around the world are trying various strategies, such as banning materials, taxing them, or providing refunds for recycling.

Answer Key

Before You Read

- A.** Possible answer(s): plastic fork, plastic rings to hold soda cans, bottle top, glove, straw, soda bottle; Yes, many of them are single-use items.
- B.** Possible answer(s): I can use reusable bottles and bring my own fork and knife when I am going to eat fast food.

Reading Comprehension

- A. 1.** a; **2.** b (Para B); **3.** a; **4.** c (Para E); **5.** c
- B. 1.** Bundanoon; **2.** San Francisco; **3.** Seattle; **4.** United Kingdom; **5.** Denmark; **6.** Norway

Reading Skill

- A. 1.** Roughly 10 percent are used in the United States alone. **2.** Skip the straw. **3.** Buy a reusable bottle and fill it with any type of beverage you like. **4.** Some cities ... have completely or partially banned bottled water. **5.** ... but it is possible to recycle most bottles and milk or juice cartons.
- B. 1.** c; **2.** c; **3.** b; **4.** a; **5.** b

Critical Thinking

Answers will vary.

Vocabulary Practice

- A. 1.** reduce; **2.** tax; **3.** Customers; **4.** containers; **5.** globally
- B. 1.** quit; **2.** bans; **3.** pollute; **4.** avoid; **5.** refund
- C. 1.** warming; **2.** problem; **3.** awareness

TEACHING NOTES

Before You Read



A. Discussion: Have students look at the photograph and answer the questions in pairs. Write a list on the board. Then ask students how many of these single-use items they use and how regularly they use them.

B. Predicting: Allow students time to read the question and write their answers individually.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- Question 2: Call students' attention to the footnote, which explains that 1 trillion is 1,000 billion. In paragraph B, it states that the United States is responsible for 10 percent of the trillion plastic bags used every year. 10 percent of a trillion is 100 billion (option "b").
- Question 3: Explain that a *Dane* is a person from Denmark. *An average person* means a usual person. To illustrate this, ask what time the average person arrives in class. Point out that some people are earlier or later.
- Question 4: Point out the picture of the metal straw next to the article.

B. Summarizing: Remind students that they learned about summarizing with a concept map in the reading skill in Unit 4A. If necessary, have students turn back to that section of the

Student's Book and review this skill again. If needed, complete the first item as an example with the class. Point out that the key words are *bottled water*, so they should scan the reading to find the section on bottled water. Elicit the meaning of *plastic wrapping*. Have students work individually. Then have them compare their answers in pairs.

- Questions 1 & 2: These answers can be interchangeable.
- Question 5: Explain that because the country placed a tax on plastic bags, this means that consumers will need to pay for the bags.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Finding Meaning (3)—Using Context**. Remind students that they have already learned about this concept. It can be helpful to note the part of speech, and teachers might want to have a quick review of nouns, verbs, adjectives, adverbs. Point out that students should try to guess the meaning of a new word based on the words surrounding it. In this way, if a student substitutes a word they already know for the new word, the sentence should still be logical.

A. Scanning: Have students complete activity A. Explain that they will need this information for activity B. Have students check their answers in pairs.

B. Words in Context: Tell students to look at the underlined words from activity A. Ask them what the parts of speech are, and what information they can learn from the rest of the sentence around the new word. It can be helpful to model the first example as a class. Check answers as a class. Ask students to explain how they arrived at their answers.

Critical Thinking

Have students rank the tips from easiest to hardest to do. Then have students compare answers with a partner. If time allows, ask students: "What could make these actions easier for you to do?" Tell them to look at the concept map on page 154. Then ask: "Do you think your country should adopt any of these strategies to convince people to reduce their plastic consumption?"

Vocabulary Practice

A. Completion: This passage describes how Wales is reducing its plastic waste. Have students look at the map and explain that Wales is part of the United Kingdom. Have students do activity A. Ask for volunteers to read each completed paragraph aloud to the class in order to check answers.

- Question 5: Explain that *globally* comes from the word *globe*. Elicit the meaning of the phrase *Wales ranked second globally*.
- Ask students to find the antonym of *long term* in the second paragraph (*near future*).

B. Definitions: Have students do activity B. Check answers as a class. To check comprehension, ask: "What is an activity that people try to *quit*? What is an example of something a government has *banned*? When do people usually get *refunds*? What should you *avoid* doing before you go to bed?"

C. Collocations: Remind students about activity A, item 5. Point out that there are many collocations with the word *global*. Have students complete activity C individually and then compare answers in pairs. Have students write other sentences using the collocations.

Video Summary: Plastic is everywhere, and most plastic is synthetic, which means it's made from fossil fuels. Since 1950, humans have made about 9.2 billion tons of plastics. About 40 percent of all plastic waste is single-use plastic, like straws and plastic bags. Plastic hurts ocean life and pollutes communities around the world. We should stop using single-use plastic and find reusable alternatives instead. We can also develop more bioplastics, which are plastics made from plants. These plastics break down in weeks, unlike synthetic plastics which can take hundreds of years.

Key Vocabulary: *alternatives, impact, ruin, synthetic*

Answer Key

Before You Watch

A. 1. b; 2. c; 3. d; 4. a

B. Possible answer(s): pens, computer mouse, phone case, water bottles; I probably use at least 30 plastic items a day. I try not to use single-use plastics, but a lot of times I have to because of food packaging.

While You Watch

A. 1. oil; 2. single-use; 3. plants; 4. faster

B. 1. a; 2. b; 3. b

Critical Thinking

Possible answer(s): **Your project name:** Cash for Coffee Cups; **Project's purpose/focus:** to get people to stop using single-use coffee cups, which have plastic lids; **Actions required:** Convince coffee shops to charge a small fee for a single-use cup, to encourage everyone to bring a reusable coffee cup from home. Use the money to help fund bioplastics research.

match the words to the definitions and then check answers with a partner.

B. Discussion: Have students work in pairs to answer the questions. Encourage students to look around the classroom and in their backpacks. On the board, make a list of items. Have a class discussion about the last two questions.

While You Watch

A. Completion: Play the video. Have students complete the chart with information from the video. Then check answers as a class. Ask students if they were surprised by any of the information. Ask them if they notice any information in the video that is similar to what they already read in this unit. If time allows, have students scan the unit again to find similarities.

B. Multiple Choice: Have students read the statements before watching again. Then play the video again and have students check answers in pairs. Ask students if they use bioplastics now, or if they would choose to use bioplastics if they were available.

Critical Thinking

Have students read the questions and create a campaign to reduce plastic waste. Allow students time to write their answers, and then have them compare their ideas with a partner. If time allows, have students work in groups of three or four and choose one project to focus on. Have them present this campaign to the class. Have the class vote on the campaign they think would be the most successful.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Elicit the meaning of *biodegrade*. Have students

VANISHED!

12



UNIT INTRODUCTION

This unit focuses on mysteries about explorers. In “Mystery on the Mountain,” students read about George Mallory and Andrew Irvine, who disappeared while attempting to reach the summit of Mount Everest in 1924. In “The Missing Pilot,” students read about Amelia Earhart and Fred Noonan, who disappeared on a flight around the world in 1937. In the video, “Earhart Mystery,” students learn different theories about Earhart’s disappearance. Students will also learn about Erik Weißenmayer, the first blind person to reach the summit of Mount Everest, and Jim Thompson, an American businessman who disappeared in Malaysia.

Visit the *Reading Explorer* website to download supplementary worksheets for this unit.

Key Words for Internet Research: *Amelia Earhart, Andrew Irvine, Blindsight movie, Edmund Hillary, Erik Weißenmayer, Fred Noonan, George Mallory, Jim Thompson, Mount Everest, Tenzing Norgay*

WARM UP

Answer Key

Possible answer(s):

1. Marco Polo—China; Ibn Battuta—Asia, the Middle East, Africa; Neil Armstrong—the moon; Zheng He—India
2. Glenn Miller, Kurt Cobain, Anastasia Romanov, Tutankhamun, Steve Fosset

TEACHING NOTES

Amelia Earhart was a famous woman aviator at a time when that was highly unusual. The year after this photo was taken, she became the first woman to fly alone across the Atlantic Ocean. In

this photograph, she is wearing a leather jacket and a leather hood covering her head. She also has a mitten on her left hand and seems to be wearing a wool sweater under her jacket. She is dressed this way because airplanes at that time were not pressurized and pilots were subject to extreme cold.

- Read aloud the Unit Title as students look at the photo. Elicit the meaning of *vanished*.
- Read aloud the caption and elicit the meaning of the words *mysteriously* and *missing*. Explain that students will learn more about Amelia Earhart later in this unit.
- Have students discuss the questions with a partner, and follow up with a class discussion.

LESSON OVERVIEW

Target Vocabulary: *achieve, camp, evidence, path, prove, section, suffer, unfortunately, unlikely, whatever*

Reading Passage Summary: George Mallory and Andrew Irvine might have been the first people to reach the top of Mount Everest. They vanished, high on the mountain, in 1924. In 1999, climbers found Mallory's body and some of his belongings, but not the photo of his wife that he had planned to leave at the summit. Does this mean Mallory and Irvine reached the top? It's hard to say. The path was difficult, and Mallory's body had no signs of frostbite. Conrad Anker believes they turned back, and possibly fell.

Answer Key

Before You Read

- A. 1.** 8,850; **2.** 4; **3.** Nepal; **4.** 1953; **5.** cold; **6.** oxygen
B. Possible answer(s): I think it will be about the two men who disappeared on Mount Everest in 1924. Maybe now the mystery has been solved.

Reading Comprehension

- A. 1.** b; **2.** a; **3.** c (Para B and C); **4.** a; **5.** b
B. George Mallory: b, c; **Andrew Irvine:** d;
Both: a, e

Reading Skill

- A.** Possible answer(s): **Evidence for:** the team found Mallory's oxygen tank; no photos.
Evidence against: difficult path / poor equipment; no frostbite.
B. 1. oxygen; **2.** body; **3.** photo; **4.** leave; **5.** difficult; **6.** equipment; **7.** frostbite; **8.** common

Critical Thinking

Possible answer(s):

- ▶ I think they reached the top because Mallory did not have the photo of his wife anymore.
- ▶ If someone found the camera that Mallory and Irvine used, that could solve the mystery.

Vocabulary Practice

- A. 1.** unfortunately; **2.** achievement; **3.** proved; **4.** path; **5.** suffered
B. 1. dead body; **2.** parts; **3.** tent; **4.** don't think; **5.** makes no
C. 1. what; **2.** who; **3.** when

TEACHING NOTES

Before You Read



Mount Everest sits on the border between Nepal and China. The Sherpas are the native people who live nearby. The term *Sherpa* is also used to refer to expert guides who help foreigners climb to the *summits* of the Himalayan Mountains. Most climbers agree that the greatest dangers on Mount Everest are *descent* (coming down from the top), *frostbite*, and *avalanches*. In April 2015, at least 22 climbers were killed in an avalanche.

A. Completion: Have students look at the picture. Ask students what they already know about Mount Everest. Have students complete the statements with items from the box. Explain that two items are extra. Elicit the meaning of *frostbite*. Have students compare answers in pairs. Then check answers with the class.

B. Predicting: Have students look at the title on page 161 and read paragraph A, and then discuss their ideas in pairs. Check answers after students read.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students to give evidence for their answers using paragraph references from the passage.

- The northeast route up Mount Everest has three "steps," or steep rock walls below the summit.

Of these, the second is regarded by modern climbers as especially difficult.

Challenge: Ask students to use the search words “Everest three steps” to learn more about climbing Mount Everest. Ask students to look at images and then tell a partner what they have learned.

B. Classifying: Make sure that students understand how a Venn diagram works. If they need more explanation, draw a Venn diagram with *cats* and *dogs*, and elicit examples of what can go in each circle. Then have students compare their answers in pairs. For activity B, explain that students should put the letters for each sentence into the correct place in the Venn diagram.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Summarizing: Using a T-chart (2)**. Remind students that they have already learned about this concept. Explain that a T-chart can be used to organize the reasons for and against an idea. This can also be stated as ideas supporting and refuting an argument. In this reading, subheadings in bold print help the reader to identify some of the “against” reasons (why Mallory and Irvine probably did not reach the summit). However, readers still have to logically evaluate which evidence supports which point of view. Reading the information in a T-chart can help to evaluate arguments because they are all written in one place.

A. Analyzing: Have students read the article again to underline the reasons for and against the argument that Mallory and Irvine reached the top. Have students compare their answers in pairs.

B. Summarizing: Have students work individually to complete the chart. Point out that they should refer to the evidence they found in activity A. Then have them check answers as a class.

Critical Thinking

- Have students read the questions and then discuss their ideas in pairs. This mystery has been debated for years. Some climbers who have successfully climbed Everest think it is possible that Mallory and Irvine reached the top, but that they had fatal problems on their descent. Encourage students to summarize the information in the Reading Skill T-chart and then to form their own opinions.
- For the second question, direct students’ attention to the photograph of the camera on page 163. Ask: How would this help solve the mystery? After students have discussed the question, compare ideas as a class. If time allows, have students search online for “final hours of George Mallory” for more information.

Vocabulary Practice

A. Completion: This paragraph describes the achievements of a blind American mountaineer. Have students look at the picture and read the caption. Elicit the meaning of *blind*. Have students do activity A and check answers with a partner. To check comprehension, ask: “What is an *achievement* you are proud of? What did it *prove* you could do?”

B. Words in Context: Have students complete activity B and then check answers with a partner. To check comprehension, ask: “What is one thing that is *unlikely* to happen today? Have you ever *camped* in the woods?”

C. Word Parts: The suffix *-ever* means “any,” so *whoever* means any person and *whenever* means any time. Similarly, *whatever* means anything. In informal speech, some people respond to a question with *whatever* when they mean that a more accurate answer isn’t important to them. *Whatever* generally means something negative. *He took no responsibility whatever for the accident, even though it was his fault.* Have students do activity C and then check answers with a partner. If time allows, have students make a new sentence with each word.

LESSON OVERVIEW

Target Vocabulary: *approach, bright, crash, disappearance, effort, flight, head, investigate, response, shine*

Reading Passage Summary: In 1937, during their flight around the world, Amelia Earhart and Fred Noonan disappeared somewhere in the South Pacific. Near Howland Island, Earhart contacted the ship that was waiting for them, but after that, the plane vanished. Earhart and Noonan might have crashed, or they might have landed on the island of Nikumaroro. Recently, dogs detected the smell of decomposed bones on the island that may have been Earhart's. A more extreme theory is that Earhart flew to the Marshall Islands, and returned home under a new name. Today, people are still investigating her disappearance.

Answer Key

Before You Read

- A.** the first woman to fly a plane alone across the Atlantic Ocean
B. Possible answer(s): Their plane might have run out of fuel and crashed in the ocean, or maybe they landed on a deserted island.

Reading Comprehension

- A. 1.** b; **2.** c (Para A); **3.** c (Para A); **4.** c; **5.** b
B. 1. d; **2.** a; **3.** b; **4.** c

Reading Skill

- A. 1.** without a doubt; **2.** likely; **3.** Perhaps; **4.** might; **5.** could; **6.** probably
B. Possible answer(s): **1.** 5; **2.** 4; **3.** 2; **4.** 1; **5.** 1; **6.** 4

Critical Thinking

- Earhart got lost somewhere over the Pacific, her plane ran out of gas, and she crashed into the sea.
 ► Possible answer(s): I agree with the author. I think that's probably what happened, but I like the idea that they made it to the island.

Vocabulary Practice

- A. 1.** headed; **2.** effort; **3.** investigation; **4.** disappearance; **5.** bright
B. 1. bright and clear; **2.** hits the ground or sea hard; **3.** airport; **4.** get closer to; **5.** answer or reply
C. 1. ability; **2.** like; **3.** appear

TEACHING NOTES

Amelia Earhart had a long flight of 4,113 km, or 2,556 miles, over the open waters of the Pacific Ocean ahead of her when she left New Guinea. She planned to stop at Howland Island, midway between New Guinea and Hawaii. Her target was a very small, flat island, just north of the equator. A U.S. Coast Guard ship, *Itasca*, waited near Howland to help Earhart as she approached. Earhart never reached Howland. The video later in this unit explains a number of theories about what might have happened.

Before You Read



A. Scanning: Have students read the timeline of major events in Amelia Earhart's life. Note that her life dates appear in parentheses after her name. Ask what other biographical events often appear in timelines (birth, early childhood, education, marriage, career points, etc.). Have students read the timeline, and elicit the meaning of *set a record*. Check the answer as a class.

B. Predicting: Have students work in pairs to discuss what they think happened to Earhart and Noonan, based on the information in the timeline and any other background knowledge that they have. They should check to see if they are correct as they read.

Reading Comprehension



A. Multiple Choice: Have students read the entire passage silently and then answer the questions. Alternatively, play the audio and have students read along. Check answers as a class, asking students

to give evidence for their answers using paragraph references from the passage.

B. Matching: Have students work individually to match each place with the correct description. Then have them compare their answers in pairs.

Additional comprehension questions are available for download on the *Reading Explorer* website.

Reading Skill

Have students read the paragraph on **Recognizing Degrees of Certainty**. Explain that when students read, they should be aware of the words that help explain how certain the author is about a claim. Readers will need to be able to tell the difference between a fact and a theory or speculation. In general, the word *theory* is used to talk about an idea that has been researched, whereas a *speculation* is a person's guess about what they think happened. However, these two words can be used interchangeably. *May*, *might*, and *could* are modal verbs, which can be used with the base form of a verb (or with the present perfect to speculate about events in the past).

A. Identifying: Have students do activity A. Check answers in pairs.

B. Analyzing: Have students do activity B. Check answers in pairs and then as a class.

Critical Thinking

- Have students look back at the reading and find the theory the author believes is true. Direct students' attention to the first sentence of paragraph D. Then have students read paragraph C again to find the details of the first theory.
- Read the questions aloud and allow students time to think of answers individually. Then have students discuss their ideas with a partner and write their ideas. Encourage students to use language describing degrees of certainty as they discuss what might have happened. Ask students to compare their answers here with their ideas in Before You Read B. Discuss comparisons as a class.

- It might be interesting to point out that even today, it is often difficult to locate a commercial airliner that disappears. Radar, voice communications, and satellite transmissions are the main ways of tracking flights. None of these were available in 1937. In addition, metal and human remains disintegrate over time, and the search area was involved in conflict during World War II.

Vocabulary Practice

A. Completion: This paragraph is about the disappearance of Jim Thompson. Have students read the first sentence of the paragraph and look at the photograph and caption. Elicit the meanings of *revive*, *search*, *trace*, *conduct*, and *faked*. Then have students do activity A and check answers with a partner. To check comprehension of the vocabulary, ask: "After class, do you usually *head* home or chat with friends? What is something you do that takes a lot of *effort*? Do you like to wear *bright* colors?"

- Ask students what they think happened to Jim Thompson and compare ideas as a class. Thompson's life story is more complicated than just being a silk merchant. Originally an architect, Thompson was trained for jungle warfare in the military. He was also an experienced intelligence agent in Southeast Asia. So, there could be many possible explanations for his sudden disappearance.

B. Words in Context: Have students do activity B. Check answers as a class. Ask: "What is an example of something that *shines*? What do you usually do when a friend *approaches* you? What is your friend's *response*?"

C. Word Parts: Have students do activity C. Check answers as a class. Give students additional practice with the prefix *dis-* by listing the following verbs and adjectives on the board: *agree*, *prove*, *organized*, *honest*, *obey*. Ask students to add *dis-* to each word and then use the changed word in a sentence to show they understand the meaning.

Video Summary: When Amelia Earhart and Fred Noonan vanished in the South Pacific, the U.S. Navy searched for clues to their disappearance. The most common theory is that Earhart ran out of gas and crashed into the ocean. However, there are other theories. Maybe Earhart reached a deserted island, but died of thirst. Perhaps she landed on the Marshall Islands and was taken prisoner in the Japanese-controlled territory. Maybe she was an American spy, and her disappearance was an excuse to search Japanese waters in the Pacific. Still another theory is that she returned secretly to the U.S. and became a housewife, by the name of Irene Bolam.

Key Vocabulary: *pretend, prisoner, reef, spy, thirst*

Answer Key

Before You Watch

A. 1. thirst; **2.** spy; **3.** prisoner; **4.** pretend; **5.** reef

While You Watch

A. 1. gas; **2.** water; **3.** died; **4.** reason; **5.** housewife

Critical Thinking

Possible answer(s):

- Some people think the moon landings were filmed in Hollywood. / Some people deny that global warming exists. / Some people believe the Earth is flat.
- I think some people believe in conspiracy theories because they do not trust those in power or because they do not understand the facts. I usually do not believe in conspiracy theories as I trust the facts given by scientists and experts. / I used to think that the pyramids in Egypt were built by space aliens, but now that archeologists have discovered the site where the workers once lived, I can see from the evidence that the pyramids were built by humans.

TEACHING NOTES

Before You Watch

A. Previewing: Ask students to read the information and think about the meaning of the words in bold. Have them complete the activity and then check their answers with a partner.

While You Watch

A. Completion: Have students read the notes about each theory and try to predict the missing words before they watch the video. Elicit the meaning of *sink*. Play the video. Have students fill in the blanks while they watch, and then ask them to check their answers in pairs.

Critical Thinking

- Read the question aloud and elicit the meaning of *belief* and *powerful people*. Have students note down any conspiracy theories they know of. Then have students work in pairs to share their ideas.
- Have students discuss in pairs why some people believe in conspiracy theories and whether they believe in any themselves. Discuss answers as a class.

Vocabulary Review

Have students work alone to check their understanding of the unit's target vocabulary. If time allows, have students write an example sentence with each word. Ask for volunteers to read their completed sentences aloud to the class.

Additional vocabulary practice questions are available for download on the *Reading Explorer* website.