

UNIT 1: HEALTHY LIVES

LESSON A

VOCABULARY

A. p. 4

attitude
cause
develop
habit
harmful
likely
manage
positive
prevent
provide

B. MEANING FROM CONTEXT p. 4

Living to 100

How old is the oldest person you know? 80 years old? 90 years old? In some parts of the world, it's not unusual for people to live 100 years or even longer. Scientists looked at two of these places—Sardinia, Italy, and Okinawa, Japan—and learned that people there **develop** fewer health problems than in other parts of the world. They are also more **likely** to live to be 100 or older.

In Sardinia, scientists were surprised to find as many men as women who were 100 years old or older. This is unusual because, in general, women live longer than men. One reason for this may be that men in Sardinia don't have a lot of stress in their lives, and stress can be **harmful**. It can **cause** health problems. The men there work outdoors, which **provides** daily exercise, while the women **manage** the house and money. According to one Sardinian man, he does the work, but his wife does the worrying.

In Okinawa, people have very little cancer and heart disease. One of the reasons could be their **positive attitude** toward life. That might **prevent** stress. In addition, Okinawans eat a healthy diet that includes a lot of fresh vegetables and a little meat and fish. They also have healthy **habits**, such as taking care of a garden and spending time with family. In other words, a positive attitude and good food seem to prevent many of the health problems found in other parts of the world.

LISTENING: How to Manage Stress

B. MAIN IDEAS and p. 6

C. DETAILS p. 7

Tara: Hello, everyone, and thanks for coming. I'd like to introduce myself. I'm Tara Sorenson, and I'm a public health nurse. Public health nurses are like other nurses, but we take care of more than one person. Our job is to keep everyone in the community healthy. I know—it's a big job! Mostly, I do this through education. Tonight, I'm going to talk with you about stress and how to **manage** it. I hope to **provide** information that will help all of you to live longer, healthier lives.

Before I talk about managing stress, however, let's think about what **causes** stress and also about the way stress feels. We all have some stress in our lives, right? Whether it is schoolwork . . . or our jobs . . . or raising children . . . These things keep us very busy, and sometimes we feel like it is all too much. In other words, life can make us feel stressed out. Our hearts beat faster and our breathing changes . . . We might have a headache or stomach problems.

Another important topic is the effects of stress. It certainly can be **harmful** to our health. For example, people who have a lot of stress in their lives can **develop** high blood pressure. That makes the heart work harder, and it can lead to different health problems. People might not eat well or might not sleep well, and that can also cause problems. On the other hand, stress can be helpful, too. One health psychologist—her name is Kelly McGonigal—says that stress helps us do difficult or challenging things. And according to McGonigal, we can be healthier if we think of stress as helpful to us—something that gives us extra energy to meet challenges. It's an interesting idea, isn't it? If you think that stress is helping you, it's less **likely** to hurt you, so your **attitude** about stress is pretty important!

OK, my last point is about managing stress. Since stress can be harmful to the body, let's talk about some ways to **prevent** these health problems. These are things you can do every day—or at least most of the time. I know—none of us are perfect, are we? One very good way to manage stress is by getting enough exercise. I recommend exercising at least four or five days a week, for at least 30 minutes. You can walk, or run, or play a sport . . . In fact, any kind of exercise can become a healthy **habit** for dealing with stress if you do it often.

LEVEL 2 Audio Scripts

Of course, it's also important to get enough sleep, eat a healthy diet, and find time to connect socially—to communicate and spend time with our friends and family members. Listen to music, take a yoga class, or find another way to relax. And remember: when you *do* feel stress, you should try to keep a **positive** attitude about it. Think of stress as something that can be helpful, and don't let stress prevent you from living a healthy life.

D. FOCUSED LISTENING p. 7

I'm Tara Sorenson, and I'm a public **health** nurse. Public **health** nurses are like other nurses, but we take care of more than one person. Our job is to keep everyone in the community **healthy**. I know—it's a big job! Mostly, I do this through education. Tonight, I'm going to talk with you about stress and how to manage it. I hope to provide information that will help all of you to live longer, **healthier** lives.

SPEAKING

PRONUNCIATION: Suffixes and Syllable Stress p. 10

When the suffixes *-(t)ion*, *-ity*, *-ic*, and *-ical* are added to words, the stressed syllable can change. The syllable just before each of these suffixes receives the main or primary stress.

-(t)ion (noun ending)

e•du•cate—e•du•**ca**•tion

-ic (adjective ending)

sci•ence—sci•en•**ti**•fic

-ity (noun ending)

pro•ba•ble—pro•ba•**bi**•li•ty

-ical (adjective ending)

hi•sto•ry—hi•stor•**i**•cal

E. p. 10

1. vacation
2. basic
3. identity
4. medical
5. specific
6. question

7. university
8. musical
9. direction
10. electronic
11. activity
12. typical

LESSON B

VOCABULARY

A. p. 12

attach
avoid
common
contain
defend
produce
reaction
research
substance
theory

B. MEANING FROM CONTEXT p. 12

Allergies

Definition: If you have an *allergy* to something, you become sick, or have an allergic **reaction**, when you eat it, touch it, or breathe it in. These allergic reactions can be serious, so people who had allergic reactions in the past need to **avoid** the **substance** they are allergic to.

Process: After someone eats, touches, or breathes in something they are allergic to, their bodies **produce** antibodies. These antibodies **attach** to cells that usually **defend** the body against health problems. But in people with allergies, these cells produce substances that cause allergic reactions such as sneezing, itching, and breathing problems.

Common Allergens (things that cause allergies):

1. Food: Milk, eggs, soy, and peanuts can cause problems, and so can foods that **contain** these ingredients.
2. Pollen: Plant allergies are often seasonal (more **common** in the spring and summer).
3. Insect bites: Stings from bees and wasps are dangerous for people with allergies.

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Causes: There are many causes of allergies. For example, if your parents have allergies, you are more likely to have them, too. The stress of modern life could be another cause. Surprisingly, living in an environment that is too clean could also cause allergies! One **theory** is that dirt is good for us. **Research** shows that allergies are not common among people who live with farm animals.

LISTENING: Living with Food Allergies**B. MAIN IDEAS p. 14****C. DETAILS p. 14**

Raymond: Hey, Elena—How's it going?

Elena: I'm fine, Raymond. I saw you in Professor Martinez's lecture yesterday. I'm glad you got into the biology class.

Raymond: Me, too. It's so popular. That lecture was interesting. I knew allergies were **common**, but I was surprised to learn that the physical process of all allergic **reactions** is pretty much the same—whether it's a reaction to an insect bite or to peanuts.

Elena: Right. The body mistakes the **substance** it's allergic to for something dangerous, and it tries to **defend** itself. It **produces** antibodies, and the antibodies **attach** themselves to certain cells. And when that happens, the cells do what they're supposed to do—they react!

Raymond: But the cells are reacting to things that are not truly harmful.

Elena: Right, at least they're not harmful to most people—things like strawberries, peanuts, and chocolate. But I'm allergic to all of those foods.

Raymond: I'd hate to be allergic to chocolate. I eat it every day.

Elena: Lucky you! But being allergic to peanuts is actually harder because you don't always *know* when food **contains** peanuts or peanut oil. It's kind of stressful!

Raymond: I didn't even think about **avoiding** peanut oil, too. But that reminds me, do you remember Professor Martinez talking about a "no-peanuts" policy here on campus?

Elena: Oh, yeah. And the cafeteria has stopped serving anything with peanuts. To be honest, though, I always have to watch out for myself; I can't trust a school policy when it comes to my health and safety.

Raymond: So, what do you do?

Elena: Well, I have a few helpful habits now—like if I am invited to someone's home, I always call or send a message a few days before I visit. I tell them how serious my food allergies are and exactly which foods I'm allergic to.

Raymond: That sounds like a helpful habit. That way they don't serve you food you can't eat!

Elena: Exactly, and here at school, I talk to the cafeteria workers at the beginning of each semester. And if I see a dish that looks good, I ask them if it has peanuts or peanut oil, or chocolate or strawberries . . . It's all about *advocating* for myself—letting people know about my allergies and taking care of my own health. It's a good way to prevent problems.

Raymond: Then I'm glad you're advocating for yourself, and maybe you're also helping some other people. I mean, you know, people who are afraid to speak up. And there are a lot of people with food allergies, right?

Elena: Yeah, that's right. **Research** shows the number of children with food allergies has gone up in recent years. I also read somewhere that food allergies are more **common** in the western world. I think seven percent of children in the U.K. have food allergies, and it's nine percent in Australia!

Raymond: Oh, really? That's a lot of kids!

Elena: It is. And it's a lot of families affected by allergies. What I mean is . . .

D. p. 15

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Raymond: Oh, really? That's a lot of kids!

Elena: It is. And it's a lot of families affected by allergies. What I mean is . . .

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SPEAKING

C. p. 17

1. **A:** What a beautiful day! I think I'll go for a run.
B: That's a great idea. It *is* such a nice day!
2. **A:** I found a great place to get a healthy lunch.
B: Where is it?
3. **A:** I found out last week that I have some allergies.
B: What are you allergic to?
4. **A:** I need to go home early today. My father isn't feeling well.
B: I'm sorry to hear that.

FINAL TASKS

OPTION 2: Discuss your healthy habits

A. MODEL p. 20

B. ANALYZE THE MODEL p. 20

Hamad: OK, so we're talking about our healthy habits and how those habits make us healthier.

Sarah: I can go first. Running a few times a week is one of my healthy habits. I love running! It's a way to take a break from studying, but it also makes my heart and my muscles stronger.

Matteo: I'm a runner, too! Where do you like to run?

Sarah: Well, my favorite place is along the lake in North Park. Being by the water makes me feel calm. But sometimes I run in my neighborhood, too.

Hamad: I have a different way to stay healthy. First, eating a healthy diet makes me feel good. And second, having a positive attitude really helps my mental health.

Matteo: Good point! Mental health is very important.

Sarah: All right, so running is a healthy habit for two of us. Eating a healthy diet and having a positive attitude are helpful for Hamad. But we haven't heard from Hua yet.

Hua: Thanks, I can go next. I do something called tai chi almost every morning.

Hamad: Sorry, could you repeat that?

Hua: Sure, I do tai chi. It's a kind of exercise, and I think it's good for both my mind and my body. It helps me manage stress. And it wakes up my body and helps me get ready for my day.

Hamad: That's interesting! I'll have to look into that.

UNIT 2: TECHNOLOGY TODAY AND TOMORROW

LESSON A

VOCABULARY

A. p. 24

affect
capable of
command
concern
data
pattern
privacy
reduce
reliable
trend

B. MEANING FROM CONTEXT p. 24

Time Line of Artificial Intelligence (AI) History

1950: In *I, Robot*, a book by Isaac Asimov, the makers of robots give the robots a **command** not to harm humans.

1950s: Computers become an important tool for doing calculations quickly and are more **reliable** than humans.

1960s: An industrial robot called Unimate begins to replace human workers in automobile manufacturing. It starts a global **trend**.

1997: The computer Deep Blue wins a match against a world chess champion because it could process information quickly. Deep Blue's abilities **affected** all technology and helped start the age of big **data**.

2011: Siri, a digital assistant, is part of the newest Apple iPhone. Siri learns from its users' **patterns** of behavior and presents its users with the most useful data for them.

2021: Universities in the USA and China show that AI can recognize a type of cancer and could **reduce** the workload of busy doctors.

2022: UNESCO publishes "Recommendation on the Ethics of AI." The document outlines ten **concerns** about AI, including **privacy**, safety, and fairness.

2022: OpenAI launches ChatGPT, a program that's **capable of** natural language processing tasks such

LEVEL 2 Audio Scripts

as text generation and language translation. As more data is collected, ChatGPT gets more precise, or accurate.

LISTENING: Artificial Intelligence**B. MAIN IDEAS p. 26****C. DETAILS pp. 26–27**

Radio Host: Well, I guess we have all heard of artificial intelligence, or AI, but people have different ideas about what AI is. Dr. Ali, how do you define artificial intelligence?

Roger Ali: Sure! That's a great place to start. There are actually a couple of categories of AI. The first is "weak AI." This means that the AI does one job, like recommending shows or movies for you to watch.

Radio Host: So, I guess anytime I get recommendations when I'm shopping online or looking at social media, that's an example of AI doing its job.

Roger Ali: Yes, exactly! Digital assistants, like Siri, are another great example of weak AI. Although they are quite advanced, they still do only one job — responding to your questions and **commands**.

Radio Host: So, if there's weak AI, does that mean there's also strong AI?

Roger Ali: You bet! Strong AI has intelligence and is **capable of** doing complicated jobs on its own. We have not achieved strong AI yet, and some people think we never will because they don't think AI will ever be able to think the same way humans can.

Radio Host: It sounds like strong AI is the type of AI that most people are afraid of.

Roger Ali: Yes, when people talk about AI controlling the world, they are talking about strong AI. It makes for great movies, but it's not a real **concern** in my opinion.

Radio Host: Getting back to weak AI, does it all work the same way?

Roger Ali: Great question. Basically, yes, all current AI works in the same way because it uses **data** to find **patterns**. For example, when we use a browser like Google to look for something on the Internet, the results that we see are chosen carefully. The browser has learned which websites are the most popular or most **reliable**, as well as which websites we visit the most often. This **reduces** the number of results and prevents us from seeing a lot of websites we're not really interested in.

Radio Host: In other words, the browser *draws conclusions* about what we're looking for on the Internet.

Roger Ali: Right. Another way AI works is by finding patterns in spoken and written language. This is called *speech recognition*. Digital assistants use speech recognition. So does the autocorrect program on your phone.

Radio Host: And those things work *pretty well* . . . They are not perfect, though. I think everyone has a story about autocorrect changing the spelling of a word to something we did *not* mean!

Roger Ali: You're right about that. Artificial intelligence is certainly not perfect. But it's improving every day.

Radio Host: I believe that! I would love to know more about **trends** in AI. Can you talk to us a little about that?

Roger Ali: Ah, the exciting part! Well, one way that AI is being used is in medicine; for example, computers can recognize a kind of cancer. And in education, online learning programs with AI can give students the kind of support they need: review and practice or more advanced tasks. They customize learning and make the education experience more personal. But **privacy** is also a trend in AI because it's a big concern. A lot of our personal data is collected online. We all need to understand how our data is being used. When companies have our personal data, they can customize the service they give us. But they can also cause problems if they don't keep our data safe. The future of AI is very exciting, but we all need to know how it **affects** our lives.

D. FOCUSED LISTENING p. 27

1. Digital assistants, **like Siri**, are another great example of weak AI.
2. Another way AI works is by **finding patterns** in spoken and written language. This is called *speech recognition*.
3. They customize learning and make the education experience more **personal**.

SPEAKING**A. p. 28**

1. I've called customer service three times today.
2. This has been my favorite class this semester.
3. Engineers haven't solved all the problems with self-driving cars.

LEVEL 2 Audio Scripts

4. Voice recognition software has gotten quite good in recent years.
5. My brother hasn't learned any other languages.

PRONUNCIATION: Long and Short Vowels p. 30

When we pronounce short vowels, our mouth and face muscles are more relaxed, and we say the vowel sounds quickly: *miss, less, book, cup*. With long vowel sounds, our muscles are more tense, and the vowels take slightly longer to say: *phone, fine, like, place*.

short vowel / long vowel

sit, seat

mad, made

let, late

not, note

quit, quite

Spelling is sometimes helpful. Words that end with a silent *-e* (*like, same*) often have long vowel sounds. One-syllable words that end in a vowel (*see, go*) often have long vowel sounds. But words spelled with C-V-C (consonant-vowel-consonant, like *cat, him*) and C-V-C-C (consonant-vowel-consonant-consonant, like *miss, task*) often have short vowel sounds.

E. p. 30

1. bit
2. Pete
3. gate
4. robe
5. can
6. loss

LESSON B**VOCABULARY****A. p. 32**

collaboration

contribute

develop

device

inspire

invention

inventor

lead

turn into

work on

B. MEANING FROM CONTEXT p. 32**National Geographic Young Explorer Gitanjali Rao**

When you hear the word “**inventor**,” what kind of person comes to mind—male or female? Young, middle-aged, or older? Someone who **leads** or someone who follows? Of course, the person has probably had an idea they **turned into** something new, but what else does the word mean?

Gitanjali Rao is a teenage inventor from the United States. When she heard about a problem with one city's water supply—the water contained the harmful substance lead—her reaction was to **develop a device** that anyone could use to check the amount of lead in the water in their house. One thing the word *inventor* can mean, then, is a person who sees a problem and works to solve it.

Like many scientists, Rao thought that she could **contribute** to finding a good solution to the problem through **collaboration**—**working on** something together with other scientists. In addition to the positive effects that Rao's **inventions** have had on the people who use them, her work might **inspire** other young inventors by encouraging them to care enough about a problem to work toward a solution. In fact, Rao is one inventor who wants to inspire others. She holds educational events for young people to introduce them to scientific ideas.

LISTENING: Tech for Good**B. MAIN IDEAS p. 34****C. DETAILS p. 34**

Antonio: OK, let's get started. I did some research for our assignment on people using technology to solve social problems and discovered Gitanjali Rao. She's a young **inventor** from the United States. She works with science and technology to solve problems and to help people. When she was only 10 years old, she heard about a city in the U.S. where the drinking water had high levels of lead in it. That was a big public health concern, and it made her think about ways people could check the amount of lead in their water.

Divya: Is there a **device** that can do that?

Antonio: There is now! It's called Tethys, and it sends the test results to your cell phone! Another idea Rao had was for an app to help prevent cyberbullying ...

LEVEL 2 Audio Scripts

you know—when people are awful to each other online. The app is called Kindly. They're still **working on** it, but the idea is that it can look at the words in a text or email and tell you if the words might be unkind or make someone feel bad.

Divya: I'd say that's helpful. I mean, sometimes people hit "send" before they think about how their words really sound, or what effect the words might have on somebody.

Antonio: If you're interested, you can **contribute** to the app development right now! The app uses a kind of AI, and people can upload messages that do or do not contain examples of cyberbullying.

Divya: I might do that.

Antonio: Rao uses **collaboration** to **turn** her ideas **into** real products. She has worked with companies like 3M and with UNICEF to **develop** her **inventions**.

Divya: She sounds perfect for this project.

Antonio: Wait, there's more! She was named a National Geographic Young Explorer, and *Time* magazine called her the "Kid of the Year" in 2020! And I believe that will **inspire** a lot more young inventors.

Divya: That's pretty cool!

Antonio: And as young as she is, Rao is also into teaching others. She has led hundreds of classes to help other students get excited about science and technology. She even received grant money from National Geographic to do more speaking and more of those classes.

Divya: Oh, I would love to go to one of those!

Antonio: Me, too!

Divya: All right, I did some research too and found an interesting story about some young **inventors** in Jordan. They are university students who created ten new apps to help with local problems.

Antonio: That sounds interesting.

Divya: Their university collaborated with UNESCO, which is the United Nations Educational, Scientific, and Cultural Organization, and some other organizations. These organizations are training the students to do programming and develop apps. The project is called YouthMobile, and the students made new apps to help with all kinds of things. There's one app to help students find public transportation, like buses, for example. There's another app to help young people find jobs.

Antonio: Wow, another great example of young people solving problems with technology.

Divya: Exactly. And if you ask me, the really cool thing is that the students are working on their phones! The phones are a way for them to create and to invent.

Antonio: That is cool! And it seems like we're all set for ideas for the assignment.

Divya: Yes, now we just have to write our report.

D. FOCUSED LISTENING p. 34

1. She **works with** science and technology to solve problems and to help people.
2. The app is called Kindly. They're still **working on** it, but the idea is that it can look at the words in a text or email and tell you if the words might be unkind or make someone feel bad.
3. She has **worked with** companies like 3M and with UNICEF to develop her inventions.
4. And if you ask me, the really cool thing is that the students are **working on** their phones!

E. p. 35

1. **Antonio:** Another idea Rao had was for an app to help prevent cyberbullying . . . you know—when people are awful to each other online. The app is called Kindly. They're still working on it, but the idea is that it can look at the words in a text or email and tell you if the words might be unkind or make someone feel bad.

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SPEAKING

D. p. 37

Excerpt 1

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Excerpt 2

Antonio: Another idea Rao had was for an app to help prevent cyberbullying . . . you know—when people are awful to each other online. The app is called Kindly. They're still working on it, but the idea is that it can look at the words in a text or email and tell you if the words might be unkind or make someone feel bad.

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FINAL TASKS

OPTION 2: Present a useful app

A. MODEL p. 40

B. ANALYZE THE MODEL p. 40

Today I want to tell you about an app called The Chemical Touch. I have it on my iPhone. You can see

the icon here . . . OK, this app may not be for everyone, but I am taking a chemistry class this semester.

Anyone else? Well, if you have ever taken a chemistry class, you know about the periodic table of elements . . .

Elements are the most basic materials on Earth, like gold or oxygen. And there are quite a few elements. Most tables have 118. And for every one of the 118 elements, there are several pieces of information. For example, you can look at the periodic table to find out the element's symbol—the symbols are either one letter or two letters, so they're a shorter way to write each element's name—also its atomic number. That tells us how many protons are in each atom of the element, and *that* gives us information about the element's chemical nature.

Right now, you might be thinking that there is a *lot* of information on the periodic table, and it might be good to have an app where I can easily find that information. And in my view, you would be right! This app, The Chemical Touch, brings up a periodic table. You just need to touch one of the elements—like this one: potassium. You find out that potassium's symbol is K, that it is a metal, that its atomic number is 19, and other information about this element. This app is helpful to me in class or while I'm doing homework because I don't need to memorize all of this information, and because I know the information is accurate *before* I spend time on a complicated chemistry problem. For these reasons, I recommend this app if you're taking a chemistry class.

UNIT 3: CULTURE AND IDENTITY

LESSON A

VOCABULARY

A. p. 44

ancestor
aspect
background
bravery
connect
generation
involve
show off
tradition
value

LEVEL 2 Audio Scripts

B. MEANING FROM CONTEXT p. 44

Cowboy Heritage

The cowboy **tradition** in Mexico began in the 1500s, when Spanish people brought the first cattle there. The workers who took care of these animals were called *vaqueros*, from the Spanish word *vaca*, which means “cow.” They wore big hats to keep the sun off their faces and high boots to protect their legs. Later, some Mexican *vaqueros* moved north into Texas, and their clothing became an **aspect** of the cowboy culture in the United States, too. In fact, wearing cowboy hats and boots is a custom that younger **generations** of cowboys still continue in many parts of North America. Certain cowboy **values** such as independence and respect are also important parts of the culture there. These days, there are two kinds of cowboys in Mexico. *Vaqueros* work with cattle on the ranches, especially in the northern and western parts of the country. Their work **involves** riding horses just as their **ancestors** did, and they live outdoors for many months at a time. In addition, Mexico also has *charros*, and they’re an important part of popular culture in Mexico. *Charros* wear beautiful cowboy clothing, ride horses, and **show off** their skills and **bravery** in sporting events called *charreadas*. Most *charros* don’t work on ranches, but their **background connects** them to the cowboy heritage in Mexico.

LISTENING: A Mexican Tradition

B. MAIN IDEAS p. 46

As part of our study of sports and culture, I want to tell you about a sport that began in Mexico. It’s called *charrería*, and it’s the national sport of Mexico.

Part of the history of *charrería* goes back to ranching. The Spanish brought horses and a ranching culture to Mexico in the 1500s. *Charreña* began as the traditional practice of herding animals with horses. Herding means making animals move in a certain direction. Mexican workers on the ranches had riding competitions to **show off** their skills. In 1933, *charrería* became the official sport of Mexico. And one exciting thing is that women were officially accepted as part of *charrería* in 1992. They have increased the popularity of the sport. Another part of the history of *charrería* **involves** war. During the Mexican War of Independence from Spain and during the Mexican Revolution, men fought

on horses and became famous for their riding style and **bravery**. These skills and bravery are **aspects** of modern *charrería*. Women also fought on horses with great style and bravery. And they did it in long dresses! Women riders still wear dresses like their **ancestors** did, and their dresses are another important aspect of *charrería*. One skill that women show is a long slide—a move their female ancestors made with their horses during the revolution to make it hard for their enemies to see through the dirt and dust the horses kicked up.

Here, in this picture, you can see a group of women in Snelling, California. That town is hundreds of miles away from the Mexican border. But these women are Mexican Americans—and the sport they love **connects** them with their Mexican **background**. They are connected through the language they use and the beautiful clothes they wear. The women are also connected to their Mexican background through the food and music that are part of the sporting event. And perhaps most importantly, the sport connects them with their history—the history of Mexico.

As a cultural **tradition**, *charrería* is a way for the younger **generation** to learn important **values**, such as hard work and respect. In fact, UNESCO, which is the United Nations Educational, Scientific, and Cultural Organization, has recognized *charrería* as part of Mexico’s cultural heritage. They call it “intangible” cultural heritage because it is not something you can touch, like a pyramid or a building.

I encourage you to go see a *charreada*, a competition, and talk to the riders. Find out from them why they do it and how they feel about their place in the long tradition of Mexican horse-riding.

D. DETAILS p. 47

1. The Spanish brought horses and a ranching culture to Mexico in the 1500s.
2. During the Mexican War of Independence from Spain and during the Mexican Revolution, men fought on horses and became famous for their riding style and bravery.
3. Women riders still wear dresses like their ancestors did, and their dresses are another important aspect of *charrería*.
4. UNESCO [. . .] has recognized *charrería* as part of Mexico’s cultural heritage.

LEVEL 2 Audio Scripts

LESSON B

VOCABULARY

A. MEANING FROM CONTEXT p. 52

Culture Survey

1. I can think of a **custom** or **belief** in my culture that might be unique in the world.
2. I know of at least one **accomplishment** of a scientist, artist, athlete, or other well-known person from my country.
3. My background is a large part of my current **identity**, or how I see myself.
4. I can think of at least one **similarity** between my culture and another culture and at least one important difference.
5. I think people in my country **tend to** welcome visitors from other countries and **treat** them well.
6. I can think of an aspect of the way parents **raise** children in my culture that might surprise people from other cultures.
7. I had a **chance** to hear stories from my family as I grew up that kept important memories alive or told lessons.
8. I feel like I come from one place and am **local** to another place.

LISTENING: Travel and Identity

B. MAIN IDEAS p. 54

C. DETAILS p. 55

Male: I know that you like to travel, and you have been to a few different countries, right?

Female: Yeah, sure—traveling is great if you have the **chance** to do it. And you're right—I've been to Canada and Germany, and last year I went with my family to Vietnam.

Male: Three countries—you're catching up to me! What if I told you that there is a woman who has traveled to every country on Earth? That's 195 countries! And she was only 35 years old when she made it to the last country on her list.

Female: Are you serious? That's quite an **accomplishment!** Who is she?

Male: Her name is Jessica Nabongo. She is the first Black woman to visit every country in the world. Her parents were from Uganda. She grew up in the United

States—in Detroit, Michigan—but was **raised** with Ugandan traditions. She writes a travel blog, and she has also written a book about her travels.

Female: That's interesting. Does she see herself as American or Ugandan?

Male: Good question! In terms of her **identity**, I'm pretty sure she sees herself as both, but it must be kind of complicated. In the U.S., people **tend to** see her dark skin and identify her as "African." And when she visits Uganda, some people hear her North American accent and **treat** her differently. In one article, she wrote that they treated her like a *muzungu*, which is a term that means "white person" in that part of Uganda.

Female: Well, the way you look and the way you talk affect how people see you, I guess. Did her cross-cultural experiences growing up make her interested in traveling?

Male: Yes, trips to Uganda as a child definitely affected her. From Detroit, she moved to New York to attend university. When she graduated in 2005, she moved back to Detroit for work, but quit two years later and moved to Japan. She taught English there for a year, and then she went to London for graduate school. She spent six months in Benin and then worked for three years in Italy after that. But during her time in all of these places, she traveled to other countries, too. She started writing her travel blog to stay connected with friends and family. I found her blog one day, and I've been following her ever since.

Female: What an exciting life! I should look for that blog.

Male: It's good. I've learned a lot. Only a small number of people have ever been to all 195 countries—in fact, there are more people who have traveled to outer space than to every country on Earth! And Nabongo wondered if any Black people had done it. She found just one, and he was a man. She wanted to do the same thing that he had done.

Female: It sounds like it was important to her to do that.

Male: Yes, but it wasn't just about the number and setting a new record. She wanted to have some kind of *cultural* experience in every country. She wanted to learn a little bit about what makes each country special—about people's lives . . . about their **customs** and traditions . . . and their values, too.

LEVEL 2 Audio Scripts

Female: And what kinds of cultural experiences has she had?

Male: Let's see . . . I remember her talking about a trip to Tonga, where she swam in the ocean with whales! And in South Sudan, where cattle are really important, she spent an afternoon milking cows and just spending time with the **local** people. And of course, there is the food . . .

Female: Of course! Sometimes trying new kinds of food is the best part!

Male: Nabongo really loves the food in the country of Georgia. On the other hand, not all of her travel experiences have been positive. One time in Paris, someone tried to steal her phone. So, she has a few stories about those not-so-good experiences, but all in all, she clearly loves to travel, and to learn, and to share all of that in her writing. She says that if you travel a lot, you see more **similarities** than differences among people.

Female: That's very cool, and that has always been my **belief**, too. But while I enjoy learning about other cultures, I can't imagine doing that much traveling.

D. FOCUSED LISTENING p. 55

1. What if I told you that there is a woman **who** has traveled to every country on Earth?
2. There are more people **who** have traveled to outer space than to every country on Earth!
3. She wanted to do the same thing **that** he had done.

SPEAKING**PRONUNCIATION: The Vowel Sound /ɜr/ p. 56**

The vowel sound /ɜr/ is the same as the *-ir* in *bird*. The sound is spelled in several ways.

her
word
hurt
learn
shirt

Notice how the vowel sound in each pair of words is different.

We should **turn** left at the corner.

This piece of paper is **torn**.

You need to **stir** the soup.

That **star** is bright.

I **work** in that office building.

Let's **walk** another block.

C. p. 57

1. burn
2. shorts
3. hurt
4. bird
5. hard
6. war

FINAL TASKS**OPTION 2: Present your identity****A. MODEL p. 60****B. ANALYZE THE MODEL p. 60**

Who am I? It might sound like an easy question, but in fact, my identity depends on perspective. For example, in my hometown, before my family moved away, local people saw me as a shy, polite girl who always did well in school. I dressed in the same way that my friends did—mostly in our school uniform—and I had the same customs as my friends, as well. I guess that is why people saw me as polite! I knew that I needed to take my shoes off before I entered their homes, and to speak politely, too—especially when I spoke to older people. I was also a good student. I did all my homework and got good grades. So those things—my schoolwork and my politeness—formed a big part of how others saw me and how I saw myself in my hometown. But I never saw myself as shy. I just like to listen more than talk.

Then my family left my hometown and moved to a larger city. My new school doesn't have a uniform, and some of the girls wear very fashionable clothes—and different outfits every day of the week. That never seemed important in my hometown, but here it affects the way people see me. They think that my family is poor. It's not true, but that's how people see me here. Fortunately, I am getting to know some of my classmates better, and they are learning more about me. My new friends think I'm funny. I'm not sure why! I think it's because I say and do things a little differently than they do.

So, who am I? That's a good question. I'm something to one person but not to another. I am many different things. I think that's pretty normal.

LEVEL 2 Audio Scripts

UNIT 4: LET'S EAT!

LESSON A

VOCABULARY

A. p. 64

apply
description
display
hunger
interest
judge
label
powerful
purchase
react

B. MEANING FROM CONTEXT p. 64

The Milkshake Experiment

Foods in stores often have **labels** on them that show things like how much fat, sugar, and salt the foods have. Some restaurants now **display** that information on their menus, too. People can use labels like these to **judge** how healthy a food is and to decide whether to **purchase** it. Can labels do more than this, though?

An experiment by psychologist Alia Crum and others suggests they can. In the experiment, participants drank two milkshakes. The **description** of one included the words "creamy" and "smooth . . . and delicious." The label said the shake had 620 calories and 30 grams of fat. The other shake was described as "light [and] healthy." According to the label, it had just 140 calories and no fat at all.

After participants drank the "creamy" shake, a blood test showed they felt satisfied and full. In contrast, after the "healthy" shake, blood tests indicated that people felt less full. This should not seem surprising; after all, foods with more calories *should* reduce people's **hunger** more. However, the two milkshakes were the same except for their labels. In other words, the only reason people felt fuller or less full was because the *labels* were different.

This result shows that Crum's experiment is important. Businesses can use food labels and descriptions in several **powerful** ways. They can use them to change how people think about foods. They can use them to

interest people in foods. Companies might even be able to **apply** what they have learned from Crum's experiment and use labels to affect how people's bodies **react** to foods.

LISTENING: Food Psychology

B. MAIN IDEAS p. 66

C. DETAILS p. 67

Lydia: I'm glad we decided to have lunch together.

Mei: Yeah, me, too. And what a great lecture that was earlier! I'm really glad you guys persuaded me we should all take food psychology.

Luis: I know, right? I had no idea restaurants had so many ways to **interest** customers in certain dishes and get us to spend more money.

Lydia: Hey, you know what we should do? We should **apply** what we learned in class to this restaurant.

Luis: Great idea! Let's start with the menu. Um . . . Ah, look! No dollar signs.

Mei: Dollar signs on the menu remind people about money, right? So when there are no dollar signs, people spend more.

Lydia: And in terms of prices, it looks like every item ends with 95 cents: 12.95, 14.95, and so on. Prices ending with 95 are supposed to feel "friendly," right?

Luis: Right. Professor Cameron also said that people **judge** dishes with prices ending with "99" or "95" as being good value. So this menu is really trying to get us to feel good about spending money!

Mei: The menu also has a lot of photos. And there are photos **displayed** on the walls, too. What did Professor Cameron say about photos of food? They can increase sales by up to a third or something?

Luis: Yeah, I think it was one third.

Lydia: And did you notice how the photos on the menu are labeled with the name of the dish? Those **labels** mean that some items appear twice on the menu. I bet those are high-margin dishes.

Mei: High-margin? I must have missed what Professor Cameron said about that.

Lydia: Uh, dishes that don't cost a lot to make but which the restaurant can sell at a good price.

Luis: In other words, high-profit dishes that the restaurant highlights in the menu because it wants people to **purchase** them.

LEVEL 2 Audio Scripts

Mei: Oh, I see. . . . That's a pretty clever way to use photos and labels, in my view!

Lydia: Yeah, you're right. And how about colors? There's a lot of red both on the menu and in the restaurant. If I remember what Professor Cameron said, red can make people feel hungry.

Mei: Right. There's a lot of yellow, too. Professor Cameron said yellow is annoying and can make people want to leave. So it seems this restaurant doesn't want us to stay too long.

Luis: That makes sense for a pizza restaurant. I mean, they don't want people hanging around the place for hours because then new customers can't come in. Anyway, speaking of **hunger**, is anybody else ready to order?

Lydia: Definitely! So, what looks good?

Mei: Pretty much everything! I was planning to order a basic cheese, but now I'm thinking about the "seasonal veggie" pizza: "a variety of farm-fresh vegetables slow-roasted with herbs and a dash of homemade chili oil." It sounds amazing.

Luis: Yeah, the menu has really good **descriptions**, for sure. Don't forget that those are designed to catch your interest, though.

Mei: Oh, wow, you're right! I'm totally **reacting** to what the restaurant is doing . . .

Lydia: That raises an interesting question, actually. How do you feel about the way restaurants use psychology to try to affect people? To try to push us to order certain items, spend more money, leave more quickly, and so on?

Luis: I don't like it, to be honest. It feels wrong. And it makes me kind of uncomfortable.

Mei: I'm with you, Luis. Still, I'm not sure there's anything we can do about it. I mean, it's just the world we live in, right?

Lydia: Well . . .

Mei: Do you have a different opinion, Lydia?

Lydia: Yes and no. On the one hand, I agree that it kind of feels wrong. On the other hand, I'd say that this kind of knowledge is pretty **powerful**.

Luis: Powerful? In what way?

Lydia: Well, now that I know the things that restaurants are trying to do, I can try to recognize and think before I react or make a decision.

Mei: That's a good point. I hadn't thought about it like that.

Luis: I think I see what you're saying. If we know how restaurants are trying to affect how we think or what we do, we can stop them from having an effect on us?

Lydia: Right. . . . Well, I can at least *try* to stop them from having an effect. It's not going to be easy, though. I mean, after reading that description, I *really* want the seasonal veggie pizza, too!

D. FOCUSED LISTENING p. 67

1. That's a pretty clever way to use photos and labels, in my **view**!
2. How do you **feel** about the way restaurants use psychology to try to affect people?
3. I don't like it, to be **honest**. It feels wrong.
4. Do you have a different **opinion**, Lydia?
5. On the other hand, I'd **say** that this kind of knowledge is pretty powerful.

LESSON B

VOCABULARY

A. MEANING FROM CONTEXT p. 72

Food for Health

If improving your **nutrition** and becoming healthier are among your goals, you might benefit from the help of a nutritionist. Our nutritionists have special training and can **advise** you on **recipes** and meal ideas that are not only healthy but cheap and easy to make, too.

You know processed food is unhealthy, but do you know which foods are processed and which are not? Our new app solves this **issue** and is super **convenient** to use. Simply take a photo of a food and wait for the result. A green light means the food is unprocessed and natural; yellow means it is lightly processed but OK to eat; and red means it is processed heavily and should be avoided. The app won't make **suggestions** about what to eat, but it can help you make better decisions.

Are you sick? Instead of just taking your medicine every day and waiting to get better, what if the food you eat could help in the **treatment** of your **illness**? Call us to learn a new **approach** that will teach you how to **combine** healthy cooking with the other things you do to stay in good health.

LEVEL 2 Audio Scripts

LISTENING: Culinary Medicine

B. MAIN IDEAS p. 74

C. DETAILS p. 75

Today I'd like to talk to you about "culinary medicine." You can probably guess from the name that it **combines** food and cooking—that's the "culinary" part—with medicine, or the **treatment** and prevention of **illness** or disease.

A major concern in the twenty-first century is health **issues** caused by poor **nutrition** and diet. These poor eating habits come from living in a fast-paced society where people don't have time to cook healthy foods. We all know it's much easier to buy something that's ready to eat like pizza, or canned soup, or a frozen dinner. But these are rarely good for you. The issue is made worse because ready-to-eat foods are often less expensive than whole foods. The low cost of ready-to-eat foods and their easy availability make them super **convenient**.

Culinary medicine offers a solution. It begins with educating people about how food affects our health and well-being. It teaches that there is a direct connection between what you eat and your health. It also involves teaching people how to cook healthy meals and how to plan their meals and save time on cooking. For example, a busy family can plan their meals for the week. They can cook food for several meals at once and put them in the freezer for later. While it sounds simple, it can be difficult to change unhealthy habits to healthy ones, and it takes time. Having a doctor who uses culinary medicine can help. Your doctor can ask you about your home cooking and offer **suggestions**.

There is a problem with that, though. Not all doctors are prepared to do this. The solution is training more doctors in culinary medicine. One example of a culinary medicine program for doctors in Brazil is called "Médicos na Cozinha" or "Doctors in the Kitchen." Doctors learn how to cook meals with **recipes** that use whole foods. The recipes are easy to make on your own at home. It's a good idea, right? Doctors learn how to make delicious healthy food, and then they share this information with their patients.

But what can you do if you don't have a doctor who uses culinary medicine? You can use the **approach** yourself. One doctor in the United States started a website to show people how to combine food and

health. The Plant-Based Los Angeles website provides recipes for plant-based foods to help people control problems like diabetes and high blood pressure. Plant-based foods include fruits and vegetables but also foods like nuts, oils, and beans. The website includes pictures with the different steps of the recipes. The pictures make you want to try the food. And they provide some nice support while you're cooking.

We all know food is important. Our diet can cause health problems, or it can help to keep us healthy. It can be hard to make changes to your diet, but culinary medicine is a great place to start. Ask your doctor if they can **advise** you about it and look at some websites to learn more.

E. FOCUSED LISTENING p. 75

1. A major concern in the twenty-first century is health issues caused by poor nutrition and diet.
2. Culinary medicine offers a solution. It begins with educating people about how food affects our health and well-being.
3. There is a problem with that, though. Not all doctors are prepared to do this. The solution is training more doctors in culinary medicine.
4. But what can you do if you don't have a doctor who uses culinary medicine? You can use the approach yourself.

SPEAKING

PRONUNCIATION: Spelling Patterns for Long Vowel Sounds p. 76

Most vowel sounds in English can be spelled in different ways, but some spelling patterns are especially common.

The /eɪ/ sound is often spelled *ai* (aid) or *ay* (day): *paid, tail, mail, stay, way, always*

The /iː/ sound is often spelled *ea* (eat) or *ee* (see): *appeal, meal, tea, three, seem, deep*

The /aɪ/ sound is often spelled *i* (kind) or *y* (style): *child, climb, blind, bye, type, rhyme*

The /oʊ/ sound is often spelled *oa* (road) or *ow* (below): *goal, loan, approach, throw, know, window*

When the last three letters of a word are vowel + consonant + -e, the sound of the vowel *a*, *e*, *i*, and *o* is usually the sound of its name: /eɪ/ for *a*, /iː/ for *e*, and so on: *late, complete, fine, note*

LEVEL 2 Audio Scripts

FINAL TASKS

OPTION 2: Debate whether cooking should be taught in schools

A. MODEL p. 80

B. ANALYZE THE MODEL p. 80

Teacher: OK, so it's time for our debate. As a reminder, our topic is "a meat-free diet is better for the planet." Team A, please begin.

Student A1: Our view is that meat-free diets are definitely better for the planet. We'll give three reasons.

First, research shows that raising animals for food uses a lot of water. Growing plants, on the other hand, uses much less water. That's good because people also need this water to drink and for other reasons.

Student A2: In addition, raising animals for food uses lots of space and causes pollution. If we stopped raising animals for food and started growing plants instead, we could feed more people and there would be less pollution.

Teacher: OK, your turn, Team B.

Student B1: Our opinion is that a meat-free diet is not better for the planet. For one thing, humans have eaten meat for all of history. Also, many animals eat meat. So how can it be bad?

Student B2: And if we don't eat meat, what will happen? Will we have more and more farm animals? That would *really* be bad for the planet.

Teacher: OK, how will you respond to Team B's ideas, Team A?

Student A2: You said people have eaten meat for all of history. That may be true, but bad things are still bad even if people have done them for a long time. And although some animals eat meat, there are more humans on Earth than any big animal. So things that people do have a much bigger effect on the world.

Student A1: If people stopped raising animals for meat, we would NOT have more farm animals on the planet because nobody would raise them. Instead, we would have fewer animals. That would be *good* for the planet.

Teacher: Team B? Your response, please.

Student B2: You said raising meat uses a lot of water, but is that really a problem? Earth has lots of water. This week, for example, it has rained every day!

Student B1: You also said raising animals for meat uses a lot of land and causes pollution. But whether we use land to raise meat or grow plants, we still produce food that people can eat. And although pollution is bad, of course, people do many things that cause pollution.

UNIT 5: INSIDE THE BRAIN

LESSON A

VOCABULARY

A. p. 84

connection
function
long-term
loss
normally
permanently
process
short-term
store
wire

B. MEANING FROM CONTEXT p. 84

The Memory Process

The memory **process** involves several steps. First, you get some information from the environment. For example, you see or hear something. Next, that information goes into your sensory memory for a very short time. Third, information you pay attention to moves to your **short-term** memory. Fourth, through repetition, the information moves into your **long-term** memory. You may remember some information **permanently**—for your whole life—once it gets **stored** in your long-term memory. When you repeat the information, you strengthen the **connections** between neurons, which play an important role in memory. Neurons **function** like **wires** that send messages throughout your body. If you can make connections between neurons stronger or create new connections, you are more likely to remember information. Information **loss** is also part of a **normally** functioning memory. Any information that doesn't move from sensory memory to short-term memory or from short-term memory to long-term memory is lost.

LEVEL 2 Audio Scripts

LISTENING: Making Memories

B. MAIN IDEAS p. 86

C. DETAILS p. 87

Toshi: I'm glad we decided to form a study group. I always find it helpful to study with other people.

Julia: I agree. Studying in a group definitely helps me. Thanks for suggesting it, Toshi.

Liz: Yes, thank you, Toshi. And Julia, it was a good idea to divide the topics and summarize the information in our notes, as well!

Julia: Well, I'm glad it was helpful. Maybe you could go first, Liz.

Liz: Sure! My topic was the memory **process**. OK, first, information enters the brain through our senses—what we taste, smell, touch, see, and hear—and it is **stored** there for a very short time—less than a second. OK, so then, only some of this information moves to our **short-term** memory—just the information that we need to use immediately.

Julia: Right. I remember that. Our short-term memory allows us to **function normally**. For example, if you ask me a question, I can remember the question long enough to answer it.

Liz: Right, but you might not remember the question tomorrow. OK, the third and final part of the memory process happens when information that we try to remember, or that our brain decides is important, moves to our **long-term** memory. This information can last your whole life.

Toshi: Right, and if you really want to remember something, you need to think about it, or say it, or do it many times. Memories become stronger when they are sent down the same pathway in the brain many times.

Liz: Yes, and these pathways are formed by neurons, our nervous system cells. Another way to think of them is as **wires** in our body. It's interesting to me that when you learn new things, your brain forms new **connections** between these wires. That's pretty amazing.

Julia: Yeah, pretty amazing stuff. Thanks, you two. That was helpful. And Toshi, what you just said ties in nicely with my topic—two types of memories: explicit and implicit memories. When Toshi described remembering something as thinking about it and repeating it again and again, he was describing one

form of explicit memory. So, any facts or information that you learn are examples of explicit memory.

Toshi: Like the names and capitals of different countries?

Julia: Exactly! The other type of explicit memory has to do with your past experiences. Family trips or important events, like your graduation, are examples of this other type of explicit memory. And then there's implicit memory. Implicit memory involves doing something again and again in order to learn it. This is how we learn skills, such as riding a bicycle or playing a musical instrument.

Liz: Based on your examples and my own experience, it seems like it's easier to make explicit memories than it is to make implicit ones.

Julia: Yes, you're right! But implicit memories last longer—people don't generally forget how to ride a bike.

Toshi: All right, so I guess it's my turn now. My topic was memory **loss**, or amnesia. There are lots of reasons we forget things. Stress, a minor head injury from a fall, or even some medicines can cause short-term memory loss. Once you feel less stressed, your head gets better, or you stop taking or change your medicine, your memory will return. However, with more serious forms of amnesia, people will **permanently** forget things from just before the event that caused the amnesia or be unable to generate new memories after the event.

Liz: That's terrible!

Toshi: I know. It must be so hard for the person who has amnesia, as well as for their friends and family.

Liz: Sharing information this way has been really helpful. I have to go to another class now, but should we do this again next week?

Julia: Yes!

Toshi: Sounds good!

D. FOCUSED LISTENING p. 87

1. **Maybe you could go first**, Liz.
2. And Toshi, what you just said **ties in nicely with my topic**—two types of memories: explicit and implicit memories.
3. All right, **so I guess it's my turn now**.

LEVEL 2 Audio Scripts

LESSON B

VOCABULARY

A. p. 92

chemical
complex
function
generate
mood
perform
signal
speed
structure
tiny

B. MEANING FROM CONTEXT p. 92

Facts about Your Brain

1. Your brain is an extremely **complex** organ. It contains over 100 billion neurons that are constantly sending messages. Different neurons send messages at different **speeds**—some faster and some slower.
2. When you exercise, your brain produces a **chemical** that makes it easier to learn. So, if you're having trouble with your homework, taking a break to do something active might be a good idea.
3. The common belief that we use only a **tiny** amount (10 percent) of our brains is wrong. Each part of the brain has a **function**, so we use 100 percent of our brains.
4. Even without words, you can figure out how someone is feeling. A part of your brain called the amygdala lets you "read" other people's faces and understand what kind of **mood** they are in.
5. Every time you think, laugh, or sneeze, chemical and electrical **signals** are moving between neurons. These messages make it possible for your brain to communicate with your body.
6. Learning changes the **structure** of the brain. When you learn a new skill, such as playing a musical instrument, your brain cells organize themselves in a new way.
7. Your brain is extremely powerful. When you're awake, it **generates** between 10 and 23 watts of electricity—enough to power a light bulb.
8. Your brain accesses and reacts to information incredibly quickly. It **performs** faster than a supercomputer.

LISTENING: The Exercise-Brain Connection

B. MAIN IDEAS p. 94

C. DETAILS p. 94

Aaron: Welcome to "The Brain Explained," where we discuss brain science in everyday terms. Our goal, as always, is to understand a little more about this **complex** organ. I'm your host, Aaron Fleming. Our guest today is Jocelyn Taylor. Today we will be talking about the effects of exercise on the brain. Jocelyn, I'm guessing you're going to tell us that exercise is good for the brain.

Jocelyn: Yes, there's really no surprise there, Aaron. Exercise—anything that makes your heart beat faster—is not only good for your body, but good for your brain as well. Not only can exercise put us in a better **mood**, it can also make us smarter.

Aaron: I know from personal experience that exercise makes me feel good, but I had no idea my daily workout was also making me smarter.

Jocelyn: It's amazing, isn't it? The reason for this is because for some time after you've exercised, your body produces a **chemical** that actually makes it easier for your brain to learn. Let me explain. You probably know that your brain **generates** some electricity.

Aaron: Right, and electrical **signals** are moving inside the brain. That's what makes it possible for us to move, or think, or have conversations like this one.

Jocelyn: Exactly, but it's a little more complex than that. Those signals in the brain are part electricity and part chemistry. Whenever you have a thought or **perform** any kind of action, it's because **tiny** chemical and electrical signals are moving at high **speeds** inside your brain. Neurons, the cells in our nervous system, move these messages around. It's as if you have billions of tiny neuron highways inside your head.

Aaron: OK, I think I understand the **function** of the neurons. They're like wires inside an electrical device. They carry the messages around the brain—and between the brain and the rest of the body. But the brain is not an electrical device.

Jocelyn: No, it's not. A lot of the brain's functions have to do with chemicals.

Aaron: And what's the chemical that's produced when we exercise?

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Jocelyn:

It's called BDNF, and it's really important for memory and learning.

Aaron: So, if this chemical affects memory and learning, I can see why you said it makes us smarter. But what about the idea that to learn something new, you need to practice or repeat it several times? For example, my son is learning to ride a bicycle. He practices near our house—with some help from me, of course. After a while, his body will remember what to do and he'll be able to ride a bike no problem.

Jocelyn: That's right! That's because when he practices riding his bike, his brain sends him "bike riding" messages along certain pathways in his brain. Those bike-riding messages form and strengthen connections between the neurons in your son's brain. In fact, the **structure** of his brain changes every time he learns something new. This is true for everyone. BDNF helps neurons connect, so this is how it makes it easier for us to learn—to bring this back to my earlier point.

Aaron: And is exercise the only way to get it? I mean, can I get it from my doctor or something?

Jocelyn: No, sorry, Aaron. BDNF is only made in the brain, and it's the result of regular exercise. And you need to exercise several times a week.

Aaron: Well then, I guess I'd better keep exercising! I want to keep my brain fit as well as my body.

D. p. 95

1. **Aaron:** I know from personal experience that exercise makes me feel good, but I had no idea my daily workout was also making me smarter.

Jocelyn: It's amazing, isn't it? The reason for this is because for some time after you've exercised, your body produces a chemical that actually makes it easier for your brain to learn.

2. **Jocelyn:** Whenever you have a thought or perform any kind of action, it's because tiny chemical and electrical signals are moving at high speeds inside your brain.
3. **Aaron:** For example, my son is learning to ride a bicycle. He practices near our house—with some help from me, of course. After a while, his body

will remember what to do and he'll be able to ride a bike no problem.

Jocelyn: That's right! That's because when he practices riding his bike, his brain sends him "bike riding" messages along certain pathways in his brain. Those bike-riding messages form and strengthen connections between the neurons in your son's brain.

4. **Jocelyn:** BDNF helps neurons connect, so this is how it makes it easier for us to learn—to bring this back to my earlier point.

PRONUNCIATION: Linking p. 95

In English, speakers do not usually pronounce each word separately. They join, or *link*, words together. Learning to recognize linking will help you understand what you hear. Here are two common types of linking.

Consonant sounds to vowel sounds

It's amazing! (It sounds like the /s/ moves to the beginning of *amazing*.)

Consonant sound to same consonant sound

He learns something new every day. (The /s/ is said a little longer.)

E. p. 95

1. Our guest today is Jocelyn Taylor.
2. You probably know that your brain generates some electricity.
3. But the brain is not an electrical device.
4. BDNF helps neurons connect, so this is how it makes it easier for us to learn—to bring this back to my earlier point.

F. INFER p. 95

Jocelyn: BDNF helps neurons connect, so this is how it makes it easier for us to learn—to bring this back to my earlier point.

Aaron: And is exercise the only way to get it? I mean, can I get it from my doctor or something?

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FINAL TASKS

OPTION 2: Present advice to future students

A. MODEL p. 100

B. ANALYZE THE MODEL p. 100

Hi everyone. Here's my meme. This is a photo of a stack of notebooks. The notebooks are the kind that you write in with a pen or pencil, not the digital kind. And the text says, "You should buy a lot of these." As you all know, our teacher encourages us to use several different notebooks. I have four: one for class notes, one for taking notes while listening, one for vocabulary, and one for grammar. That's a lot of notebooks for one class! But learning English is a complex process, and writing things down helps me to remember information better. I like to review class notes, as well as the listenings. I also like to take just my vocabulary notebook with me when I go out on the weekends. I get in some extra review while I'm waiting for the bus. When I review new information frequently, I remember it better. And that's easy to do with notebooks for different things. Some students may not want to have so many notebooks, but I suggest they have at least two—one for class and one for keeping track of new vocabulary. The long-term benefits for learning outweigh the short-term problem of carrying around so many notebooks.

UNIT 6: KNOWLEDGE IS POWER

LESSON A

VOCABULARY

A. MEANING FROM CONTEXT p. 104

The Feynman Technique

Richard Feynman is one of the most important scientists of the last 100 years. He attended MIT and Princeton University, two of the best colleges in the United States, and then became a professor. During his life, he developed several major ideas that helped him **gain** fame, **success**, and even a Nobel Prize. Feynman was also known as an excellent teacher.

Even if you know little about the history of science, you may be **familiar** with Feynman's name from the so-called "Feynman **Technique**." This is an **effective**

way to learn something quickly. The method is similar to an old saying: If you want to learn something well, teach it to others. Feynman went further. He said you only know something well if you can explain it in a simple way so that even children can understand. This **ability** is one that many great teachers have.

The Feynman Technique has several stages. First, choose a topic you feel is **worth** knowing. Second, find and study useful **resources** for learning about this topic. After that, explain what you have learned to a child. Doing this will help you recognize things that you need to study more because your **knowledge** of the topic is not complete. You will also recognize things the child did not understand. This could be because your explanation was too hard, or perhaps some of what you said was not **relevant**. Finally, go back to stage two and repeat the process. Keep doing this until you feel you understand the topic completely and can explain it simply.

LISTENING: Teaching Yourself

B. MAIN IDEAS p. 106

C. DETAILS p. 107

Welcome to another episode of the "Lifelong Learning" podcast. Today, I'm going to talk about being an autodidact.

The word *autodidact* may not be **familiar**, but in this episode, I'll explain what it means. I'll also discuss why people become autodidacts and what some of the advantages and disadvantages of doing so are.

OK, so let's answer the important first question: What is an autodidact?

Basically, it just means someone who teaches themselves something: an academic subject, a skill, a language, or, well, anything really. For example, I taught myself several languages, including English, because I wanted to work as a translator. That experience made me feel I could be **effective** at teaching myself other things, too, such as learning how to do podcasts.

Being an autodidact is nothing new. People have been teaching themselves new skills throughout history. For example, Mexican artist Frida Kahlo—one of my favorite painters—was mostly self-taught. More recently, Richard Williams taught himself to be a successful tennis coach. You may not know *his* name, but I bet you've heard of his two daughters, Venus and Serena Williams.

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Right, so our second question is: Why do people teach themselves things?

There are hundreds of reasons or more. One common reason—perhaps the most common reason, actually—is that people want to learn something because they’re interested in it. For example, a person might teach herself the guitar because she loves music. Another reason is to have **success**. For instance, a person might decide to do what I did and teach himself English because he wants to get a job that requires it. Another common reason is to save money. Somebody might teach herself different cooking **techniques** in order to spend less on takeout food, for instance.

OK, so we know what it means to be an autodidact and why people do it. Now let’s discuss what the pros and cons are.

One of the main advantages of being an autodidact is that it’s cheap or even free. It’s possible to **gain knowledge** by watching online videos on your phone or borrowing books from the library. And, of course, you can learn by listening to podcasts like this one.

Another pro is that you can learn whenever you want. If you can only study on Sunday mornings and Wednesday evenings, for example, that’s possible when you teach yourself.

Another benefit of being an autodidact is that teaching yourself new things can help you become more successful. The skills you learn can obviously be helpful in your personal, academic, or professional life. Plus, teaching yourself can improve your **ability** to think critically. It can also help you develop autonomy—to control your own life, in other words. Critical thinking and independent learning are very important skills for success in today’s world, at school and at work.

So, what are the disadvantages to teaching yourself, then? For one thing, it can be hard to push yourself to study without a teacher. It can also be hard to judge how well you’re doing or whether you’re improving. In addition, companies are less likely to trust your knowledge if you have gained it on your own instead of learning from a school.

Perhaps the biggest con is that not all **resources** are actually good, especially if you’re relying on the Internet. A lot of sites and articles are full of misinformation. So, if you’re going to teach yourself,

you have to be able to judge whether a resource is **worth** using, whether it has useful, **relevant** information. This requires developing something called information literacy. Information literacy means knowing when you need information, where to find it, how to evaluate it, and how to use it. This isn’t easy, but having this kind of literacy is another valuable skill for success!

SPEAKING

PRONUNCIATION: Silent Consonants p. 110

Consonants are usually pronounced, but some words have silent consonants. Often, silent consonants are part of a sequence, or cluster, of consonants.

The *b* in *mb* and *bt* is always silent at the end of a word: *thumb, doubt*

The *k* in *kn* is always silent at the beginning of a word: *know, knife*

The *w* in *wr* is always silent at the beginning of a word: *write, wrong*

LESSON B

VOCABULARY

A. MEANING FROM CONTEXT p. 112

Common Student Concerns . . . Don’t Let Them Worry You!

Going to college is a big step, so it’s natural to have concerns. Your life is going to change in many ways, and you will face **challenges**. But you’ll be able to **deal with** most issues if you work hard, get help from others, and look after your health.

Some students believe they’re not clever enough for college. They feel **intimidated** by how smart everyone else seems. If you have this feeling, talk to friends and classmates. You’ll soon **realize** that many people think this way. Just remember that if you have been accepted to a college, you’re definitely **bright** enough to be there. In other words, if you believe in yourself and do the work for your classes, you’ll be fine.

Choosing what to study can also cause stress. But you don’t need to choose a major until the end of your second year, so there’s plenty of time! And even if you think you know what you’ll **major in**, it’s a good idea to **check out** a variety of classes before you make

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your final decision. You may really **get into** something and **end up** choosing a major you'd never considered before. And if you really can't decide, don't forget that you probably have the **option** to major in one subject and minor in another.

LISTENING: Choosing a Major**B. MAIN IDEAS p. 114****C. DETAILS p. 114–115**

Antonio: Hi, Tanya. Mind if I join you?

Tanya: Oh, hi, Antonio. No, of course not.

Antonio: What are you up to?

Tanya: I'm just sitting here thinking about what to **major in** next year.

Antonio: Oh, yeah? I'm still thinking about that, too, though it's probably going to be either chemistry or biology.

Tanya: Biology? Ah, I'm jealous. I'd love to choose biology as my major, but it's not really an **option** for me. I'll probably **end up** choosing history like my father . . .

Antonio: Why isn't biology an option for you? I mean, when we took Intro to Biology last semester, you knew the answer to pretty much every question the prof asked in class. You really seemed to know what you were doing in the lab, too. And now that I think about it, didn't you get an A on the final exam?

Tanya: Well, I guess, but it took me a lot of reading and hard work to do that. I enjoyed the class—in fact, it was the most interesting class I've taken—but having to work so hard made me **realize** that, well, I'm just not **bright** enough to do science.

Antonio: You're joking, right? You're like one of the smartest people I know.

Tanya: Thanks, Antonio. That's nice of you to say, but I just don't think I've got the right kind of brain for science.

Antonio: Huh. You're actually serious, aren't you? You know what? You should **check out** this website called SciAll.org. That's S-C-I-A-double L . . . actually, I'll just text you the info. The site has loads of videos that I think you might find interesting, so do me a favor and check it out before deciding on your major, OK?

Tanya: Well, I'm kind of busy . . . but I guess I could take a look. What kinds of videos are on the site, anyway?

Antonio: There're a bunch of them, but the ones I think are most likely to be useful for you are scientists talking about how they got into science in the first place.

Tanya: Well, I guess that might be interesting, but isn't it just really bright people talking about, you know, how smart and good at science they are?

Antonio: No, that's not it at all. Look, the SciAll site was started by this scientist Mike Gil as a nonprofit in order to help more students **get into** science, especially students who don't normally become scientists. And one of the points Gil makes is that everyone can bring something different to science. He says it's good for science that people are different because that means they'll bring in new ways of thinking about things and new ideas. Anyway, Gil didn't plan to become a scientist, but then he . . . you know what? Why don't I just play this one part of a video for you? I think I can find it . . . Here we go.

Mike Gil: When I was starting out as a scientist, or as like a science hopeful—this was when I was in college. I actually went to college as a journalism major and then had this crazy field experience that made me want to be a scientist. But I will tell you that when I first started down that path, I was incredibly **intimidated**. I mean it was . . . every time I interacted with a scientist, and that included graduate students, not just senior scientists that have been doing it for a long time, but even graduate students intimidated me, man. Because they were so on top of their stuff. Like they really knew what they were talking about. And they talked about things with such confidence, had so much knowledge. And I thought, "Man, I don't think I'm smart enough for this." That was a concern for sure early on. "I don't think I'm smart enough."

Tanya: Huh. He sounds just like me.

Antonio: I know, right?

Tanya: OK, I'm *definitely* interested, but, well, I mean, can I trust this Mike Gil person?

These days, a lot of sites claim to have valuable, relevant info, but they're really just trying to sell something, you know?

Antonio: No, no, don't worry. It's totally legit, and everything on the site is free. Like I said, the site doesn't make a profit, and Mike Gil's a National

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Geographic Explorer and he's given a TED Talk, so I think you can trust what he says about science.

Tanya: All right. That's good to know.

Antonio: And he's not the only scientist whose videos are on the site. There are others who talk about similar things, like how they got into science, some **challenges** they had to **deal with**, that kind of thing.

Tanya: You know, this sounds more and more interesting. Listen, thanks for the advice, Antonio. I feel more positive about next year already.

Antonio: Hey, no problem. That's what friends are for, right?

Tanya: Yeah.

D. FOCUSED LISTENING p. 115

1. **Antonio:** Why isn't biology an option for you? I mean, when we took Intro to Biology last semester, you knew the answer to pretty much every question the prof asked in class. You really seemed to know what you were doing in the lab, too. And now that I think about it, didn't you get an A on the final exam?
2. **Tanya:** OK, I'm *definitely* interested, but, well, I mean, can I trust this Mike Gil person? These days, a lot of sites claim to have valuable, relevant info, but they're really just trying to sell something, you know?
Antonio: No, no, don't worry. It's totally legit, and everything on the site is free. Like I said, the site doesn't make a profit, and Mike Gil's a National Geographic Explorer and he's given a TED Talk, so I think you can trust what he says about science.

FINAL TASKS

A. MODEL p. 120

B. ANALYZE THE MODEL p. 120

There are several things I'd like to learn. For example, I'd like to be able to cook, and I want to be more effective at speaking English, of course. But my biggest wish is to learn how to play *shogi*—that's S-H-O-G-I, which is also called Japanese chess.

Uh, I can see from your faces that some of you don't know what that is, so let me explain. If you know chess, then shogi should be kind of familiar. There are some differences between the two games, though. The

shogi board is bigger, for instance, and players have more pieces to move. The biggest difference is that players can use pieces they take from the other player.

Any questions so far? No? OK.

I have several reasons for wanting to learn shogi. The first one is that my mother and my sisters are all really good players. My younger sister, especially, has had a lot of success. She won a prize last year, actually. Anyway, they keep telling me I should get into shogi, too.

What else? Well, I also want to learn shogi because it's part of Japanese culture and I feel it's important to learn about our own culture. Maybe you feel the same about something from your culture?

Finally, I've heard that learning shogi might help me develop my ability to think critically, which is an important skill that is worth learning.

I think I'll know I have been successful at learning shogi if I can understand different game techniques and start to win against players at my level.

Does anyone have a question?

UNIT 7: OUR CHANGING WORLD

LESSON A

VOCABULARY

A. MEANING FROM CONTEXT p. 124

EARTH'S FOUR SYSTEMS

Earth is our home. It's the **source** of everything we need, from the food we eat to the valuable resources, such as oil and metals, that we need to make and use everyday products. Because it's so important, it's not surprising that many people are interested in studying Earth. And it's a huge topic to study. It's so **broad**, in fact, that the subject is often divided into four aspects called **systems** or spheres. These **cover** the main systems of our planet: the lithosphere, hydrosphere, biosphere, and atmosphere. These names sound **technical**, but in simple terms, they are Earth's rocks, water, life, and air.

These systems seem **separate** from each other, but scientists **emphasize** that they are connected. The hydrosphere and atmosphere, for example, are both **essential** for life. Moreover, **events** that affect one sphere can have an effect on other systems, too. For

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example, an earthquake can make rocks move and cause large ocean waves. These moving rocks and powerful waves can kill animals and people. Serious natural disasters like this are relatively **rare**, although global warming is causing other kinds to increase.

A. PREDICT p. 126

Thanks for coming to this info session. Let's get the ball rolling, shall we?

So you want to know what Earth science is and whether to major or minor in it. I'll try to give enough information to help you make that decision. I'll leave time for questions at the end. And if there's something I don't cover, come and talk to me. I've got office hours tomorrow between ten and twelve.

LISTENING: Studying Earth Science**B. MAIN IDEAS p. 127****C. DETAILS p. 127**

Thanks for coming to this info session. Let's get the ball rolling, shall we?

So you want to know what Earth science is and whether to major or minor in it. I'll try to give enough information to help you make that decision. I'll leave time for questions at the end. And if there's something I don't **cover**, come and talk to me. I've got office hours tomorrow between ten and twelve.

OK, so first I'll try to paint a picture of what Earth science is. It's literally the biggest subject on the planet because it involves studying the four **systems**, or areas, of Earth: the lithosphere, the . . .

You know what? Let's not get too **technical** at this point. In simple terms, Earth science is the study of four things: the rocks, water, air, and life on our planet. We often think of these things as **separate**. However, they're all connected. So in Earth science, for instance, you might study how living things can have an *effect on* Earth's atmosphere and also how they can *be affected by* it.

This is one of the great things about Earth science; it's a very **broad** subject and often combines different fields of study. If you like chemistry *or* math *or* physics *or* computer science, you can major in one of those subjects. But what if you like chemistry *and* math *and* physics *and* computer science? Well, Earth science involves *all* of them, so it's a great choice for people with broad interests.

It's also a good choice for those who love the natural world. Studying a typical science means researching in the library, studying in your room, or experimenting in a lab. You'll do all those things if you major in Earth science. But you'll also go on field trips to some of the coolest places on Earth.

What else? Well, an important part of Earth science is studying natural disasters. You know, floods, earthquakes, and so on. We can't *prevent* these **events** yet, but Earth scientists are learning to *predict* when they might happen and reduce their impact.

Let's move on now and discuss what doors an Earth science degree can open. Typical jobs include looking for valuable resources like oil, gas, and others. To give an example, something called "**rare** earth elements" are **essential** to make the phones, tablets, and computers we all use. As their name suggests, these substances are rare, so finding new **sources** of them would be a huge benefit.

There's a lot of concern about the environment these days, so it won't surprise you to learn that many people who major in Earth science study things like climate change and how we can protect the environment. For example, they work on renewable energy sources such as the wind and study how humans are changing the planet.

One final thing I want to **emphasize** is this. Studying Earth science will teach you many useful skills. You'll make predictions and draw conclusions. You'll do research and conduct experiments. You'll learn to communicate more effectively, too—both in writing and speaking. And all those things I've just mentioned? They're key skills that companies want.

I'm not saying that studying Earth science is a ticket to any job. But it will help you develop skills that are in high demand.

OK, so we're almost out of time. Any questions?

E. FOCUSED LISTENING p. 127

1. Thanks for coming to this info session. Let's get the ball rolling, shall we?
2. OK, so first I'll try to paint a picture of what Earth science is.
3. Let's move on now and discuss what doors an Earth science degree can open.
4. I'm not saying that studying Earth science is a ticket to any job.

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SPEAKING

PRONUNCIATION: **Dropped Consonants** p. 129

Consonant clusters can be hard to pronounce. To make them easier to say, we often omit, or leave out, certain consonant sounds. Two common examples are the /d/ sound in words that end with *-nds* and the /t/ sound in words that end with *-cts* or *-nts*:

diamonds, effects, friends, events, hands, facts, sounds, prints

D. p. 129

1. My parents are history teachers.
2. It's so cold. My hands are freezing!
3. Think about all the facts before you decide.
4. Are your friends coming to dinner?
5. People felt the effects of the flood for years.
6. During the winter, they spend most weekends skiing.
7. One person counts while the other person hides.
8. Hold on! It will only take a few more seconds.
9. Do you follow the latest fashion trends?
10. How many tents do you think we'll need?

LESSON B

VOCABULARY

A. p. 132

accept
evidence
form
key
majority
occur
revolution
standard
support
surface

B. MEANING FROM CONTEXT p. 132

The Billion-Year Theory

An important theory in Earth science is that the present is **key** to understanding the past. For example, we can see valleys **form** and get deeper when water flows across the **surface** of low areas of land between

hills or mountains. From this, we can infer that a valley with no river today did have water that passed through it at some point. In other words, we can generally understand the events and processes of the past if we study what **occurs** today.

These days, all Earth scientists **accept** this idea. But when James Hutton first suggested the theory in 1785, no one, except for a few people, believed it. Why did the **majority** of experts not accept it? Because if Hutton was right, it would suggest two things. First, that Earth was very old. And second, that tiny actions repeated over a long time could have an effect on the planet. At the time, however, the **standard** thinking was that Earth was young and that only huge, sudden events, such as earthquakes, could affect it.

But Hutton felt he was right. He and the others who believed him began to look for examples to **support** his theory. They soon found them in the rocks of Scotland, Hutton's home. As more **evidence** was found, it became clear Hutton was right. The present was key to the past, and Earth was very old. Billions of years old, in fact. This knowledge started a **revolution** in scientific thinking that led to many other important ideas.

LISTENING: A Revolution in Earth Science

B. MAIN IDEAS p. 134

D. DETAILS p. 135

Professor: All right, let's get started. At the end of the last class, I asked you to read about plate tectonics. Would anybody like to sum up what you read?

Student 1: So, the theory is that Earth's **surface** is made of huge plates of rock. These plates move around slowly over millions of years. This movement causes the continents to change shape. And, uh, sometimes two plates move into each other. When that happens, mountains can **form**, and earthquakes can **occur**.

Student 2: Plates can also move away from each other, right? That also leads to earthquakes and new land being formed. And, uh, I think plates can also move past each other, too, which can *also* cause earthquakes.

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Professor: OK, that's a good summary of the science. Now let's review people's reaction to the theory. As you read, a scientist Alfred Wegener noticed that some continents on the world map looked like puzzle pieces that would fit together. For example, he thought South America and Africa looked like they could connect. Wegener looked for **evidence** that could **support** his ideas. He found some, and as a result, he developed a theory that the continents moved over time. What happened next?

Student 2: Well, it seems impossible for continents to move. And Wegener's theory didn't really explain *how* this could happen. So at first, most scientists didn't **accept** his idea.

Professor: Right. And then . . . ?

Student 2: And then over time, people found more evidence, and so, more and more people accepted the idea than didn't accept it.

Professor: Yeah, exactly. And these days, well, pretty much everyone accepts that Wegener was right. Now we're discussing this theory because it's a clear example of something called a paradigm shift. It's a technical phrase, I know, but its meaning is pretty simple. A paradigm shift is a **revolution** or important change in what people accept as true. And it's important that you understand it because it's one of the **key** ideas for this history of science course.

A paradigm shift happens in stages. Somebody suggests a new theory that is different from the **standard** idea. At first, people don't easily accept this new idea. People want to keep believing the old idea. But over time, more evidence is found, and more people accept the new theory. This continues until the new theory *becomes* the standard idea.

That description probably reminds you of what happened with the theory of plate tectonics. Now can anybody suggest *other* examples of paradigm shifts from the history of science?

Student 2: How about the change in how we think about the movement of the sun and the planets? People used to believe the sun and other planets all went around Earth, right? But then scientists suggested the planets go around the sun. People didn't accept that idea at first, but now we know it's true.

Professor: Good. That's a nice example from astronomy, the study of the universe. Are there any other examples of paradigm shifts you can think of?

Student 1: How about germ theory? You know, the idea that diseases are caused by tiny germs like bacteria or viruses.

Professor: Yeah, that's one of several examples from medical science. Good.

Student 1: How about the idea that human activity produces carbon dioxide, you know, CO₂ gas, that affects the climate? Could that be a paradigm shift?

Professor: Let me throw that question back to you. *Could* it be a paradigm shift?

Student 1: Well, I think that in the past, most people didn't realize human activity could produce carbon dioxide.

Professor: OK . . .

Student 1: And even when we found out that humans *did* produce CO₂, most people didn't think we produced enough to affect the climate.

Professor: Keep going . . .

Student 1: But now the **majority** of scientists—the majority of *people*, in fact—accept that human activity *does* affect the climate.

Professor: In other words, a new theory has replaced an old one.

Student 1: Yeah. Oh, so that *is* an example of a paradigm shift.

Professor: I'd say so.

C. p. 135

A paradigm shift happens in stages. Somebody suggests a new theory that is different from the standard idea. At first, people don't easily accept this new idea. People want to keep believing the old idea. But over time, more evidence is found, and more people accept the new theory. This continues until the new theory *becomes* the standard idea.

F. FOCUSED LISTENING p. 135

And **then** over time, people found more evidence, and so, more and more people accepted the idea **than** didn't accept it.

LEVEL 2 Audio Scripts

FINAL TASKS

OPTION 2: Talk about a change in our world

A. MODEL p. 140

B. ANALYZE THE MODEL p. 140

Maryam: Hello. I'm Maryam, and this is Khalid.

Together, we'll be giving a presentation about a big change that our world has experienced.

First, Khalid will describe the change. After that, I'll talk about how things might change in the future.

Over to you, Khalid.

Khalid: Thanks, Maryam. OK, so the big change we decided to talk about is plastic in the environment.

Plastic was first invented about 150 years ago, and people thought this new material was amazing. Because it was so useful, people used it to make everything. Think about the things you have with you right now. Many of them—including your clothes, your phone and other devices, and the things in your bag—are either made of plastic or, at least, have some plastic in them.

Unfortunately, we now know that plastic is not a perfect material. When people throw plastic away, less than 15 percent of it gets recycled. The rest can get into the environment, including in the oceans. This plastic can take hundreds of years to disappear. During that time, it breaks into smaller and smaller pieces, and these can get everywhere. Studies even show that there are tiny pieces of plastic in our food!

Maryam: As Khalid just said, there are tiny pieces of plastic everywhere in our environment. Luckily, now that people are aware of the problem, the situation may be changing.

One piece of good news is that people are changing their behavior. These days, many people no longer use plastic shopping bags or plastic drinking straws. In many places, these items are not even available anymore. Recycling plastic is becoming much more common, too. This means that less plastic is entering the environment.

Another piece of good news is that new technology might help us remove plastic that is already in the environment. Scientists have found some bacteria—tiny things that often cause diseases—that can eat plastic. By using bacteria like these, we could easily

turn plastic into useful things, such as new plastic items or even foods that people can safely eat.

Khalid: OK. Thanks for listening. Any questions?

UNIT 8: LIVING HISTORY

LESSON A

VOCABULARY

A. p. 144

alive

ancient

authentic

demonstration

experience

institution

interpret

preserve

purpose

site

B. MEANING FROM CONTEXT p. 144

The History of Museums

Ancient Museums

There were museums in **ancient** times, but they were more similar to modern colleges than modern museums. They displayed books, art, and other important objects, but these **institutions** were mainly places for people to learn about and discuss ideas.

Early Museums

Then in the 1700s in Europe, studying the past became fashionable. People started visiting ancient **sites** to find, buy, or sometimes just take wonders from the past—historical objects that are especially beautiful or important. They would then display these objects in “wonder rooms” in their homes. These private museums were not open to everyone; only the wealthy were able to visit.

Early Modern Museums

Over time, the **purpose** of these early museums changed. They opened to the public and focused more on educating people. Museums also realized they needed to **preserve** the objects. They developed ways to protect them and keep them safe for everyone to see.

LEVEL 2 Audio Scripts

They also hired experts to **interpret** the objects so visitors could understand them better.

Modern Museums

These days, some museums take different forms. For example, outdoor living museums let visitors **experience** life in the past. They preserve **authentic** historical buildings, and their interpreters keep the past **alive** by giving **demonstrations** of how people did things long ago.

Future Museums

What changes and developments will we see next in museums? For instance, will some museums decide to return important historical objects to their original countries and put copies of these wonders on display instead, and will online museums become more popular than traditional ones?

LISTENING: Preserving the Past**B. MAIN IDEAS p. 146****C. DETAILS p. 146**

Museums are essential for **preserving** the past. Without these **institutions**, many wonders of history might be lost. For example, we might not have this beautiful jade death mask of Pakal the Great, a Maya ruler, which is in Mexico City's National Museum of Anthropology. We wouldn't have these amazing bronze drums, which are displayed in the Vietnam National Museum of History and are characteristic of **ancient** Vietnamese culture. Nor would we be able to see the many wonders of Egypt, such as this ancient board game called *senet* in the Egyptian Museum in Cairo.

We're lucky that objects like these have been preserved, but they are just small pieces of history. What if we want to preserve more than just *pieces* of the past? What if we want to preserve the past *itself*?

This sounds impossible, but it's what living museums try to do. As the name suggests, the **purpose** of these museums is to make the past come **alive**. These open-air spaces let visitors walk around buildings from the past and **experience** daily life in those times. The museums try to involve all five of visitors' senses: sight, sound, touch, smell, and taste.

Minseok Folk Village near Seoul, South Korea is a good example. This living museum is just like a traditional

Korean village from a few hundred years ago. Visitors see real buildings from Korea's past and people wearing clothes from this time.

Visitors to this **site** can see—and hear—men and women making things—including traditional medicines or large pots for storing *kimchi*—using **authentic** methods and tools. Visitors might also hear the accents and music of that time, or other sounds, such as horses in the streets.

Visitors to Minseok can dress in traditional clothes, too, as well as touch objects from the period. They can smell the wood used to build some tools and the houses. And if they get hungry, they can eat at one of the site's restaurants, some of which offer traditional dishes such as *japchae* noodles and *gomtang* soup.

Many living museums hire workers to **interpret** the site for visitors. These interpreters wear historical clothes, give **demonstrations**, and try to "translate" the past so visitors can understand it. There are two kinds of interpreters: first-person and third-person. First-person interpreters act and speak like people from the past. In contrast, third-person interpreters speak from a modern point of view.

A good illustration of first-person interpreters can be found at Colonial Williamsburg, perhaps the best-known living museum in the United States. The interpreters there act like they are from the eighteenth century. They will happily talk to visitors, but only about topics from that time. If visitors ask about the modern world, the interpreters act like they don't understand.

Living museums aren't perfect. After all, even the best interpreters can't fully understand how people lived, spoke, thought, or acted in the past. Still, most living museums hire experts so they can be as authentic as possible. These experts read books and other documents from the period. They study paintings from the time to know what clothes and tools looked like. They ask for advice from people who have learned traditional ways of doing or making things from older generations.

Living museums have been called time machines. This isn't true, of course. But these modern museums *do* keep the past—as well as our *interest in* the past—alive. And that's truly a wonder.

LEVEL 2 Audio Scripts

D. p. 147

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E. FOCUSED LISTENING p. 147

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SPEAKING

PRONUNCIATION: Sentence Stress p. 149

Speakers stress the most important words in a sentence. These are usually content words, which are words that express meaning, such as nouns, verbs, adjectives, and adverbs. In general, the final content word in a sentence is stressed slightly more than the others.

Museums have a long history. Over time, their purpose has changed.

In contrast, speakers usually don't stress function words, such as articles, prepositions, conjunctions, or helping verbs, which show grammatical relationships.

LESSON B

VOCABULARY

A. p. 152

analyze
civilization
imagine
method
organize
project
sign up for
take part in
the public
volunteer

B. MEANING FROM CONTEXT p. 152

Citizen Science

When you think of doing science, what do you **imagine**? You probably think of scientists working in labs, but this is not true for all science **projects**. There are some that allow nonscientists to do important research work.

Scientists sometimes **organize** and run experiments in which anyone can **take part**. These are called citizen science or community science projects because members of **the public** can work on them. Over the years, such projects have given scientists a lot of useful knowledge. Perhaps the oldest citizen science project is from Japan. For 1200 years, people in Kyoto have been able to **volunteer** to note the dates when cherry trees look the most beautiful. This information may not seem important, but it helps scientists **analyze** and understand how our climate has changed.

Another project, called "Ancient Lives," gave the general public a chance to help experts understand the **civilizations** of ancient Greece and Egypt. Interested people first had to **sign up** online and do some training. After that, they looked at damaged pieces of old documents and typed in the words they saw. Some documents were poems or letters; others described shopping trips from long ago.

LEVEL 2 Audio Scripts

Not all citizen science projects are started by scientists. Terry Herbert, a member of the general public, searched for treasure in a field in England in 2009. He found so many gold and silver coins that he had to ask archaeologists for help. They then studied the site using scientific **methods**.

A. PREDICT p. 154

Welcome to another episode of “Crowd Science.” This podcast covers community science projects, including many that *you* can take part in. The three projects I want to share today each offer the public a chance to learn about the past but in very different ways.

LISTENING: Crowd Science**B. MAIN IDEAS p. 154****C. DETAILS p. 154**

Welcome to another episode of “Crowd Science.” This podcast covers community science **projects**, including many that *you* can take part in. The three projects I want to share today each offer **the public** a chance to learn about the past but in very different ways.

First up: dinosaur dig vacations! Some institutions and organizations, including museums, colleges, and private companies, **organize** these special vacations where people can search for dinosaur bones, teeth, and other fossils. I went on one of these vacations last year, actually, in the beautiful Canadian province of British Columbia. It was challenging, but amazing.

Along with the other volunteers, I was given some basic training to learn the correct scientific **methods** and techniques. After that, we did the same work as the scientists at the site. For the first few hours, I worked with the team of scientists to remove a large dinosaur bone from the ground. They told me the bone was millions of years old and explained all about it. It was great because not only was I learning about the past, but I was working on something that would increase other people’s understanding, too. And then after lunch, I noticed a shape in the dirt. I asked one of the scientists what it was. I couldn’t believe it when she told me it was a dinosaur tooth and that I could keep it!

As I’m sure you can **imagine**, spending days outside in all kinds of weather while searching for dinosaur

fossils can be hard work. If you’re not really interested in digging around in the dirt, there are other options. A website called MicroPasts has a list of archaeology projects that you can **sign up** and **volunteer for** from the comfort of your own home. Projects might focus on **civilizations** from places like ancient Britain, Rome, Egypt, and the Near East, for instance.

A lot of the projects involve reading the notebooks of experts from the past. Many of these notebooks are old and hard to read. As a result, researchers need people to type up handwritten words or describe old drawings. This work helps archaeologists and other scientists **analyze** and understand the research that was done in the past.

This may not sound especially important, and you won’t discover a dinosaur tooth or other cool historical objects. Still, it all contributes to our understanding of the past and is a fantastic way to let nonscientists help science advance. Some projects give volunteers a chance to learn information that has never been published before. This can help experts—and the public—learn how life in the past was both similar to and different from life today. Other projects help museums bring their information up to date. A good illustration is the British Museum, which has organized several citizen science projects on the MicroPasts site. Participants enter data from old records so that experts can study the information more easily.

Going on a paleontology or archaeology vacation and **taking part in** an online project are both organized ways to do community science. The last community project I want to tell you about, though, is an example of a different kind of project that didn’t have an organizer at first.

For many years in Northern Europe, British people working on fishing boats and Dutch people walking on the beach have found objects made by ancient humans. Archaeologists studied these objects and realized that there used to be land in the sea between eastern Britain and Europe. They have now named this area “Doggerland.” Thousands of years ago, lots of humans and animals lived there. However, around 9000 years ago, after a natural disaster and a long period of climate change, it was lost under the sea. Without the many objects collected by the public over the years, archaeologists would not have discovered Doggerland.

LEVEL 2 Audio Scripts

Digging for dinosaurs, doing online citizen science projects, and finding and reporting unusual objects from the past are very different activities. But they're also similar because each one helps us learn more about the past. But why is this important? Is it *just* to gain knowledge?

For me, the answer is no. For me, one of the amazing things about people is that we love learning not *just* because we want to learn, but *also* because we want to grow, to develop, and to find solutions to the problems that we face. In other words, we can take this new knowledge and use it for a purpose such as understanding climate change or recognizing that life in ancient civilizations was familiar in many ways. And for me, community science projects are a great way to learn and grow. I hope you feel the same.

D. p. 155

1. First up: dinosaur dig vacations! Some institutions and organizations, including museums, colleges, and private companies, organize these special vacations where people can search for dinosaur bones, teeth, and other fossils.
2. A website called MicroPasts has a list of archaeology projects that you can sign up and volunteer for from the comfort of your own home. Projects might focus on civilizations from places like ancient Britain, Rome, Egypt, and the Near East, for instance.
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4. Going on a paleontology or archaeology vacation and taking part in an online project are both organized ways to do community science. The last community project I want to tell you about, though, is an example of a different kind of project that didn't have an organizer at first.

E. FOCUSED LISTENING p. 155

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SPEAKING**C. p. 156**

Today I'm going to talk about an ancient Maya city in Guatemala called San Bartolo. It's an important site because beautiful wall paintings, called murals, were discovered there. The story of that discovery is actually kind of interesting. Let me summarize it.

About 20 years ago, an archaeologist and National Geographic Explorer, William Saturno, was studying the site. He was hot and tired and hungry and thirsty. And he was feeling disappointed because he hadn't found anything new or exciting. Then Saturno saw a hole. He thought people who wanted to steal objects from the site had probably made it. Still, the sun was hot, and the hole looked cool, so Saturno climbed in. He looked around and saw paint on a wall. He looked more closely and started to get excited. Why? He had just discovered paintings that were nearly 2000 years old!

That's pretty amazing, right? But it actually gets even more amazing. About ten years after his discovery of the San Bartolo wall paintings, Saturno was part of a team studying a second Maya site in Guatemala. And guess what? The team discovered *new* wall paintings.

FINAL TASKS**OPTION 2: Present a historical object, site, or person****A. MODEL p. 160****B. ANALYZE THE MODEL p. 160**

I'd like to talk about the pharaoh Tutankhamun. Uh, "pharaoh" means something like "king." Tutankhamun is probably the most famous pharaoh from the ancient civilization of my country, Egypt.

Most well-known people from history are famous because they did something important or amazing during their lives. Tutankhamun is different. He was pharaoh about 3350 years ago for less than 10 years. And he died before he could do anything very special.

So why is Tutankhamun so important and famous? Well, it's because of three things that happened after he died. First, many gold items and other valuable objects were placed in Tutankhamun's tomb. A tomb is a stone building where the dead body of an important

LEVEL 2 Audio Scripts

person is put. Second, and more importantly, when Tutankhamun's body was discovered, all of the treasure was still there!

The discovery of his body and the treasure happened about 100 years ago in 1922. Previous discoveries in Egypt had little or no treasure, so the third reason he became famous is that newspapers and radio stations all over the world told the story of Tutankhamun's gold. He became one of the first celebrities.

Anyway, Tutankhamun is special and important because he's a symbol of ancient Egypt. People all over the world know about him. And museums all over the world display objects from his tomb.

UNIT 9: SPECIES SURVIVAL

LESSON A

VOCABULARY

A. MEANING FROM CONTEXT p. 164

Species in Danger

Species go **extinct** for many reasons. For example, if the climate gets colder and some plants cannot grow, **creatures** that **depend on** these plants for food could die out. Natural disasters are another reason. Research shows that volcanoes caused the deaths of many species **approximately** 200 million years ago.

Humans also cause species to die out. Sometimes we are **directly** the reason: Passenger pigeons went extinct—the last one died on exactly September 1, 1914—because people ate so many of them. In other **cases**, we are indirectly the cause. For example, people brought animals like pigs and monkeys to the only island where dodo birds lived. As a **consequence**, these birds went extinct because the pigs and monkeys ate their food and eggs.

However, it isn't all bad news; there are survival successes, too. For example, scientists sometimes find "extinct" species are actually still alive. Take the Bolivian Cochran frog, also known as the glass frog. Scientists thought it was extinct, but researchers found some in 2020. The **endangered** animals were taken to a special center, where they are **currently** being kept safe.

And some people have made it their **mission** to protect endangered species. In the past, huge numbers of *Pau Brasil* trees were cut down. However, the *Pau Brasil* is Brazil's national tree and important in that country's history. People all over the country wanted to save it, so they protected older trees and planted new ones.

LISTENING: Protecting Endangered Creatures

B. MAIN IDEAS p. 166

C. DETAILS p. 167

According to a recent report by the United Nations, **approximately** 8 million species of plants and animals live on Earth. And up to one million of those species are **endangered**; many of them could soon go **extinct**, or die out.

This is not just a problem for those endangered species. It's a problem for every living thing on Earth. That includes us—humans—of course. You see, every **creature** on Earth **depends on** one or more other creatures. A **consequence** of one species dying out is that others might become endangered. Without bees and other insects, for example, we might not be able to grow the crops we depend on for food.

However, even though some well-known species like elephants, tigers, and giant pandas are in danger, they will probably *not* go extinct. Why? Because they're too popular and loved. People would try to save them. The same is not true for animals that are less popular or attractive, such as the proboscis monkey or the Titicaca water frog. In **cases** like those, the creatures need someone to protect them. Luckily, two National Geographic Explorers are using the power of photos, videos, and stories to do just that.

Explorer Lucy Cooke first became interested in animals, especially frogs, as a child. Her parents helped her build a "frog hotel" in her backyard. She still loves animals, and gives talks, writes books, hosts TV shows, makes documentaries about and takes photos of animals. Her **mission** is to save animals that are strange or unusual looking by helping people understand and even love them.

She says that they look that way because of where they live, what they eat, and how they act. In the case

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of the blobfish, for example, there are photos where it looks pretty strange. However, these photos were taken in a tank of water. When the blobfish is in its home deep at the bottom of the ocean, it looks pretty normal. Here's what it should look like there.

Like Lucy Cooke, Explorer Joel Sartore also became interested in animals as a child. He read that some bird species like the passenger pigeon had gone extinct. This made him upset, and he decided to do something with his life to help prevent this from happening to other animals.

Unfortunately, species keep on going extinct. This is caused **directly** or indirectly by our actions. Joel wanted to get people to care about endangered animals that might soon go extinct. He decided to start the Photo Ark.

Joel's idea was to take photos of animals **currently** in zoos, aquariums, and wildlife parks around the world with either a black or white background behind them. Doing this lets us see the animals clearly. We can look them in the eye just like we do when we're having a conversation with people. Joel plans to photograph about 20,000 species for the Photo Ark. And big or small, cute or ugly, dangerous or safe, the goal of Joel's project is to inspire people to protect them all through his photos.

Lucy Cooke and Joel Sartore have different approaches, but their goal is the same. They want to teach us about wild animals. At the very least, their work will help us remember some species that have disappeared. But in the best case, their work will inspire us to preserve the many species that share our home not just because we *can*, but also because we *should*.

E. FOCUSED LISTENING p. 167

1. In the case of the blobfish, for example, there are photos where it looks pretty strange. However, these photos were taken in a tank of water. When the blobfish is in its home deep at the bottom of the ocean, it looks pretty normal.
2. Joel's idea was to take photos of animals currently in zoos, aquariums, and wildlife parks around the world with either a black or white background behind them.
3. Joel plans to photograph about 20,000 species for the Photo Ark. And big or small, cute or ugly, dangerous or safe, the goal of Joel's project is to

inspire people to protect them all through his photos.

4. Lucy Cooke and Joel Sartore have different approaches, but their goal is the same. They want to teach us about wild animals.

SPEAKING**PRONUNCIATION: Thought Groups p. 168**

We divide the words we say into "thought groups." These are words or ideas that naturally go together, such as phrases, clauses, or even short sentences. After each thought group, we usually pause briefly. And the last content word of each thought group is usually stressed.

Like Lucy **Cooke**, / Explorer Joel **Sartore** / also became interested in **animals** / as a **child**.

LESSON B**VOCABULARY****A. MEANING FROM CONTEXT p. 172**

Andy: My sister's trying to **convince** me to stop eating meat.

Bo-Sang: That doesn't seem **realistic**. I mean, she knows how much you love meat. Still, eating plants more often *would* be good for the planet.

Andy: Yeah, she said that meat production is a **threat** to the environment. I guess I'll **consider** it.

Carly: You're writing a story for your creative writing class? Cool! What's it about?

Deanna: Well, this **deadly** illness is **spreading** across the country. A doctor starts developing a medicine to **cure** it. She makes a lot of **progress**, but then she catches the disease and dies before she can tell anyone about the cure!

Carly: Sounds exciting . . . but also kind of sad!

Eduardo: Argh! My new computer must have a virus. I've tried to **get rid of** it, but nothing works. It's been like this since I bought it, and I haven't been able to do any work.

Fatima: Well, return it. You paid for it, so you have the **right** to a computer that works.

Eduardo: Yeah, you're right. I'll do that.

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C. p. 173

How much do you really know about mosquitoes?
Let's find out!

Some people think all mosquitoes are the same and that all mosquitoes bite. That's not true, though. There are actually around 3500 different species, but only female mosquitoes bite, not males.

Some people think all mosquitoes spread diseases that affect people. Again, that's not true. In fact, only around 100 species of mosquitoes spread diseases. That's the good news. The bad news is that some of these illnesses can be deadly. This is why mosquitoes are a bigger threat to humans than creatures like sharks, spiders, or snakes.

Take malaria, which is the most dangerous disease that mosquitoes spread. There's no cure that works for everybody, and scientists say it kills tens of thousands of people every year. Experts are working on ways to cure malaria, of course, but even if governments can convince companies to pay for this work, it's not realistic to think we'll have a cure in a year. In fact, it will probably take many years.

All of this explains why mosquitoes are widely hated. Nowhere are people standing up for the rights of mosquitoes! Still, because we can't get rid of mosquitoes, we have to consider how best we can live with them.

LISTENING: Solving the Mosquito Problem

B. MAIN IDEAS p. 174

C. DETAILS p. 175

Moderator: Mention dangerous creatures, and sharks, lions, and spiders come to mind. Those animals aren't even in the top ten, though. In fact, the world's most **deadly** creatures are mosquitoes. These insects **spread** diseases that kill approximately a million people a year as well as many animals like dogs or horses.

Given this **threat**, should we simply **get rid of** mosquitoes? Joining me to discuss this are three experts: Dr. Habib, a biologist; Dr. Pereira, an ecologist; and Dr. Sharma, a medical professional.

Dr. Habib, what are your views?

Habib: Well, the first thing I would say is that killing them all is not necessary. There are over 3500 kinds of

mosquitoes, but only about 100 kinds actually spread diseases. So it would be enough to kill just those species.

However, we don't have the knowledge or ability to do this yet. Maybe we could think of a way, but every mosquito species is different. A method of killing one species almost certainly wouldn't work for all of them.

It *might* be possible to do all this, but making that kind of scientific **progress** would be *very* hard and *very* expensive in my view.

Moderator: Dr. Pereira?

Pereira: For me, it's crazy even to **consider** this. If we killed all mosquitoes, what would that lead to? I'm sure there would be negative consequences. For example, there are thousands of species of birds, bats, frogs, fish, and insects that eat mosquitoes. What would happen to them? Some might end up going extinct.

As Dr. Habib said, doing this would be hard and expensive. So let's not kill mosquitoes. Instead, let's focus on finding ways to **cure** the diseases they spread.

Moderator: And Dr. Sharma?

Sharma: Listen, the thing we have to remember is that mosquitoes kill at least a million people a year. Saving human lives is the most important thing here. If we *can* do that, we *should*.

Dr. Pereira said that there would be negative consequences if we killed all mosquitoes. Her point doesn't **convince** me. Scientists killed a species of insect that affected cows back in the 1960s with no bad effects. Perhaps there wouldn't be a negative impact this time, either.

As for Dr. Pereira's other point, we've *tried* to cure the diseases that mosquitoes spread. We've tried for thousands of years, and we've always failed. It's not **realistic** to think we will succeed this time, so we need a different approach.

Moderator: Back to you, Dr. Habib.

Habib: I'm going to repeat my earlier point. Doing this would be hard, expensive, and maybe impossible. And even if we *could* kill mosquitoes, what would happen then? I think Dr. Pereira's right: There would be negative consequences. Perhaps a species of mosquito or other insect that's "safe" now would start spreading deadly diseases.

LEVEL 2 Audio Scripts

Still, as Dr. Sharma pointed out, humans have failed to cure the diseases that mosquitoes spread. In fact, some things we've tried have actually made those diseases more dangerous. So I agree we need to try something new.

Moderator: Dr. Pereira?

Pereira: Sorry, but I disagree with Dr. Sharma that human lives are the most important thing. There are about eight billion people on Earth but approximately 17 *trillion* mosquitoes. That's more than 2000 mosquitoes for every person. And I don't think we have the **right** to kill them just to make life better for us.

And how does Dr. Sharma know that killing a species of insect in the sixties had no bad effects? Perhaps there were no negative consequences *for humans*, but maybe the effect on other insects or birds or bats *was* bad.

Look, all living creatures share this world and depend on each other. We don't know—we *can't* know—the consequences that killing mosquitoes would have.

And so, we shouldn't take the chance.

Moderator: Dr. Sharma again.

Sharma: I'm human. You're human. We're all human. And that's why we care about our own species more. That's why saving human lives is more important than saving insects.

And again, we've done this before. Back in the 1970s, scientists got rid of the smallpox virus. As a result, nobody dies from that disease anymore. That's a good thing! And it would be a good thing to get rid of mosquitoes, too, to stop people dying from the diseases they spread.

Look, part of being human is trying to improve our lives, to make things better. If we weren't like that, we'd all still be living in caves. For me, killing mosquitoes is just one more way we can improve our lives. As I said before, if we can do that, we should.

Moderator: Your final thoughts very briefly, please. Dr. Habib first, then Drs. Pereira and Sharma.

Habib: OK, well, I'd say we absolutely *should* find a solution to the problem of diseases spread by mosquitoes. But in my view, killing all mosquitoes is absolutely *not* the answer.

Pereira: I'm with Dr. Habib. We've already caused too many species to disappear. Doing it again would be going backward, not making progress. Instead, let's improve education, housing, and health care in places where diseases from mosquitoes are dangerous. That would save more lives, I think.

Sharma: Sorry, but I think we *should* do it. Saving human lives is the most important thing. I think that's an opinion everyone can agree on.

E. p. 175

1. I'm sure there would be negative consequences. For example, there are thousands of species of birds, bats, frogs, fish, and insects that eat mosquitoes. What would happen to them? Some might end up going extinct.
2. And even if we *could* kill mosquitoes, what would happen then? I think Dr. Pereira's right: There would be negative consequences. Perhaps a species of mosquito or other insect that's "safe" now would start spreading deadly diseases.
3. Back in the 1970s, scientists got rid of the smallpox virus. As a result, nobody dies from that disease anymore. That's a good thing!
4. We've already caused too many species to disappear. Doing it again would be going backward, not making progress. Instead, let's improve education, housing, and health care in places where diseases from mosquitoes are dangerous. That would save more lives, I think.

FINAL TASKS

A. MODEL p. 180

B. ANALYZE THE MODEL p. 180

Angelo: Mika and I are going to talk about sharks. I'll first explain why they're under threat. After that, Mika will discuss how we can help them.

OK, so as a species, according to our research, sharks have lived for around 450 million years. In contrast, wolves have only been alive for about one million years. Sharks have survived for so long because they're very good at killing other fish. So why are they endangered now? One word: us.

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One reason why we kill sharks is fear. We're afraid they will kill us, but that probably *won't* happen. Data from the Australian government shows that sharks kill only about ten people a year on average. So why do we think sharks are dangerous? For me, it's because of all the stories and movies about sharks. They make us believe sharks are deadly.

The second reason why people catch and kill sharks is for food. Sometimes we catch sharks because we want to eat them. But more often, sharks die each year because they get caught when people are trying to catch *other* kinds of fish to eat. National Geographic suggests that 100 million sharks are killed in this way every year.

OK, so that's why sharks are endangered. Over to you, Mika.

Mika: Thanks, Angelo.

There are many things we can do to protect sharks. One of them is to be more careful in the water. I know Angelo said sharks don't kill many people—and that's true—but if we're careful about where we swim and when we swim, sharks won't kill *anybody*. And if that happens, perhaps our fear of sharks will decrease.

What else can we do? We can stop eating sharks. Even more importantly, when we buy other kinds of fish, we should make sure we only buy fish that is caught in a way that doesn't endanger sharks. If we do this, fishing companies will be more careful, and fewer sharks will die.

And, of course, we can give money to organizations that want to help sharks. If we can't give money, we could volunteer our time. And, of course, we can share information about sharks with others. If more people know the truth about sharks—in other words, that they aren't as dangerous as we think—more people might take action to save them.

Thank you.

Unit 10: Finding Success

LESSON A

VOCABULARY

A. p. 184

ambition
characteristic
complain

confidence
determination
doubt
flexible
give up
income
lack

B. MEANING FROM CONTEXT p. 184

Different Types of Entrepreneurs

Entrepreneurs typically share certain **characteristics**. For example, they have the **determination** to work hard and the **ambition** to succeed. They are **flexible** and can adapt to changing business situations. And they can overcome their own **doubts** and those of others. Many kinds of entrepreneurs are recognized. Their names typically explain what they do.

Social entrepreneurs want to make money and help society. Ecopreneurs are a specific kind of social entrepreneur and want to protect the planet. For example, they might sell products that are environmentally friendly.

As the name suggests, infopreneurs generate **income** by selling information. An infopreneur might teach an online course about baking cakes, designing websites, or learning English. Computers make selling information easy, so many infopreneurs are also techpreneurs.

Solopreneurs found, or start, their businesses alone. Some have **confidence** they can succeed without help. Some might have a business so small that they don't need help. Or others may have no partners because starting a business was accidental. That is, they did not plan to do it.

Wantpreneurs are different. They talk about wanting to become entrepreneurs but rarely achieve their goal because talking is all they do. In other words, wantpreneurs don't **give up** on their dream, they never even try to achieve it. This could be because they **lack** the skills or determination to succeed or because they **complain** about issues instead of dealing with them.

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LISTENING: Five Things You Need to Succeed

B. MAIN IDEAS p. 186

C. DETAILS p. 186

My session today is “Five Things You Need to Succeed in Business.”

Let’s begin with business plans. In order to have a successful company, you need to start with a business plan, right? Wrong! If you want to succeed in business, start *without* a plan.

Don’t believe me? Sergey Brin and Larry Page didn’t have a business plan, and their business has been kind of successful. You might have heard of it: Google?

The second thing that can help you succeed is to start out with little or no money.

That might sound crazy, but it worked for Do Won Chang. He’s one of the people who founded the fashion company Forever 21. At one point, the company’s **income** was billions of dollars a year. Yet when he started, Chang worked in gas stations and coffee shops just to survive.

Another thing you need to be successful is to have **doubts**. You should doubt yourself, and other people should too. The key is to have at least one person believe you will not succeed.

Mikaila Ulmer started in business when she was just four years old. Can you imagine how many times people told her she was too young? Now, though, she’s a social entrepreneur. She uses part of the money from her company, Me & the Bees Lemonade, to protect bees.

Ok, the fourth key to business success is not finishing your education. Apple, Facebook, Microsoft, Spotify, Twitter, and Uber were all started by people who did not get a college degree. And the founder and CEO of Lens Technology, Qunfei Zhou, dropped out of high school when she was 16 years old. That didn’t stop her from becoming a leader in the technology industry, providing glass screens to makers of cell phones and other electronics.

Finally, the last thing you need is to have no **ambition** or interest in becoming an entrepreneur.

Melissa Kieling, for example, didn’t plan to start a company. One day, her kids **complained** that the food

they took to school didn’t taste good at lunchtime. She had an idea for a way to keep their food cold and fresh. It worked, and Kieling ended up starting a business called PackIt, which is very successful.

OK, let’s sum up. To succeed in business, you need no business plan and little or no money. You need to **lack confidence** and not finish school. And you need to have no interest in starting a business. Raise your hand if that sounds like you. Somebody? Anybody? Nobody!

Well, I was joking, of course. The point I wanted to make is that *anybody* can be a business success. That’s not to say that achieving business success is especially easy. It’s not, and in fact, there *are* five **characteristics** entrepreneurs *do* need. And I’m not joking this time.

First, you’ve got to have **determination**. You may fail along the way—most people do. But if you **give up**, it’s extremely unlikely that you’ll succeed. If you keep trying, though, success is more likely.

Second, you’ve got to be **flexible**. In other words, you’ve got to be able to deal with new situations and overcome hard challenges as they happen.

Third, sometimes you won’t know the answer to a question or the solution to a problem. It’s important to be OK with this.

Fourth, have confidence in yourself. Believe you can succeed even if other people doubt your ability.

And finally, well, I find that it *really* helps to have a good sense of humor!

C. p. 189

1. Sergey Brin and Larry Page didn’t have a business plan, and their business has been kind of successful.
2. It worked, and Kieling ended up starting a business called PackIt, which is very successful.
3. That’s not to say that achieving business success is especially easy. It’s not, and in fact, there *are* five characteristics entrepreneurs *do* need. And I’m not joking this time.
4. You may fail along the way—most people do. But if you give up, it’s extremely unlikely that you’ll succeed.
5. And finally, well, I find that it *really* helps to have a good sense of humor!

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LESSON B

VOCABULARY

A. MEANING FROM CONTEXT p. 192

Chanda Shroff

In many industries, being successful generally seems to involve making and selling **goods** as cheaply as possible. Some entrepreneurs, though, have found success by doing things differently. Chanda Shroff is one example.

On a visit to Kutch in northwest India, Shroff saw special saris, the traditional dress worn in India, embroidered by local women using traditional methods. Shroff wanted to help the women who had made them because they were experiencing a drought. And she thought these clothes were so beautiful that other people would find them attractive, too. So she ordered 30 saris and displayed them at an art exhibit in Mumbai. These saris were not a famous **brand**, but Shroff **charged** a lot for them. Despite the high price, people loved them, and they all sold within a few hours.

After seeing how popular these saris were, Shroff began a new **career** as a social entrepreneur. She founded an **organization** called Shrujan. One of its goals was to help Kutch women gain **motivation**, confidence, and **independence** by earning a **fair** price for their work. Another **aim** was to protect the traditional ways of doing things that these women followed.

Shroff died in 2016 after a long life, but her work lives on. In addition to Shrujan, which is now run by Shroff's children, there is a museum called the Living and Learning Design Centre. This institution is the biggest crafts museum in India. Because of everything she did, it's no surprise that the people of Kutch continue to remember and **respect** Chanda Shroff.

LISTENING: Rule Breakers

B. MAIN IDEAS pp. 194–195

C. DETAILS p. 195

Erika: In previous classes, we've seen that many businesses seem to follow the rules. That is, there are typical things that most of them do.

But there *are* successful people and companies that do things differently, and today Pedro, Ali, and I are going

to present on successful businesspeople who broke some of the typical rules of business.

Pedro's going to start us off.

Pedro: So, I'm going to talk about Howard Schultz. He's the businessman who helped make Starbucks such a household name.

One way that Schultz broke the typical rules was that he didn't focus only on making money. It was his idea to call the people who work at Starbucks *partners* rather than *workers* and to give them a tiny part of the company after working there for some time. This means that if the company does well, those partners make extra money that year.

Another way Schultz did things differently was by encouraging customers to stay for hours even if they only ordered one coffee. This is unusual because generally, restaurants and cafés prefer that customers leave quickly. That way, new customers can come in and order something. But Schultz wanted his coffeeshops to be "third places" where people would be happy to spend a lot of time. The other two places are the home and the office.

In other words, Schultz didn't mind if customers stayed in his coffeeshops without spending much money. That sounds like kind of a strange way to be successful. Still, Starbucks is probably the biggest and best-known coffeehouse in the world, so you have to agree it was a good idea!

Thanks. On to Ali now.

Ali: OK, so I researched Anita Roddick. She ran the Body Shop company from 1976 until her death about 30 years later.

I think there are several ways in which Anita Roddick did things differently compared with most businesses and entrepreneurs. For one thing, she didn't really dream of starting a company. So I guess you could call her kind of an accidental entrepreneur.

For another thing, her **aim** was to sell products that were good for people, animals, and even the planet. For instance, her **brand's** skin creams have never been tested on animals. These days, a lot of companies focus on being environmentally friendly, but apparently it wasn't very common in the early days of the Body Shop.

What else? Uh, she was one of the first businesspeople to focus on **fair** trade. Instead of paying the cheapest

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possible price for raw materials and **goods**, she paid a fair price for them. This helped farmers and other people who made the products because they earned more money and had more **independence**. It meant that she had to **charge** customers more, though, which is kind of unusual. Most businesses try to avoid charging a lot because they know customers look for low prices.

Oh, and she wrote a book called *Business as Unusual*. I've started it, and it's pretty interesting. I'm learning a lot.

Thank you. Erika?

Erika: My entrepreneur is Yvon Chouinard. He started Patagonia, the outdoor clothes and equipment brand.

I'd say that he's done things differently since the start of his **career**. He started off as a climber, not a businessperson. He couldn't find the climbing equipment he needed, though. He didn't have much money to buy equipment, but he had the **motivation** to teach himself how to make what he needed. After a while, he started selling the things he made to other climbers.

After starting Patagonia, Chouinard focused on using the company's profits to protect the environment. About 20 years ago, he started the international **organization** 1% for the Planet. The basic idea is that members of the organization agree to give one percent of their sales to protect the planet. Patagonia was the first company to join.

He's done a lot of other things that are unusual, but the biggest one is that in 2022 he gave his company away. Patagonia is now run by a group of people whose mission is to use the money it makes to deal with climate change. Patagonia earns over a billion dollars a year, so that's a really amazing decision that's really breaking the rules! In my mind, he's not an entrepreneur. He's more like an "antipreneur," if you get what I mean, but I really **respect** him.

D. p. 195

1. In previous classes, we've seen that many businesses seem to **follow the rules**. That is, there are typical things that most of them do.
2. I'm going to talk about Howard Schultz. He's the businessman who helped make Starbucks such a **household name**.
3. She was one of the first businesspeople to focus on **fair trade**. Instead of paying the cheapest possible price for **raw materials** and goods, she paid a fair price for them.

E. FOCUSED LISTENING p. 195

1. I'm going to talk **about** Howard Schultz.
2. Her aim was to sell products that were good **for** people, animals, and even the planet.
3. She was one of the first businesspeople to focus **on** fair trade.
4. The basic idea is that members **of** the organization agree to give one percent of their sales to protect the planet.

SPEAKING**PRONUNCIATION: Stress for Contrast p. 196**

We usually stress the last content word in each thought group.

*The store sells **clothes**.*

*The entrepreneur achieved her **aim**.*

Sometimes, however, we stress different words to emphasize a contrast. This can be to contrast two ideas or to suggest that some information was incorrect. This stress for contrast, or contrastive stress, is often stronger than stress in normal speech.

*The store only sells **cheap** goods / not **expensive** ones.
Actually, / the entrepreneur **didn't** achieve her aim.*

FINAL TASKS**A. MODEL p. 200****B. ANALYZE THE MODEL p. 200**

For my presentation about a failure that led to success, I'm going to talk about my cousin Su, who's a few years older than me.

One high school in my hometown is famous because it's really good. It's also really hard to study there because so many students want to go there. Anyway, Su decided it was her aim to study there.

So she took the entrance test, but she failed. This was a huge surprise for everybody in our family because Su is really smart and usually did well without trying. Nobody could believe she failed.

Su, especially, was really shocked. At first, she was really upset with herself. She seemed to give up her ambition. After a while, though, she changed her attitude. She told us that she realized something important. She said that in the past, she usually

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did well even without working hard. As a result, she stopped trying hard and didn't have enough determination or motivation. That was why she failed the high school entrance test.

She said that she was going to work as hard as she could from now on. And that's what happened. Su went to a different high school and worked so hard that she got into one of the best universities in the country. She's studying there now, in fact, and her grades are still awesome.

To sum up, my cousin Su failed a test. But that failure led to her current success because it taught her that she needed to work hard and always try her best. Actually, Su's failure has helped *me* be more successful, too. I used to be like her in that I didn't really try hard. But after I saw that working hard helped her, I started to do it, too. My grades have improved a lot as a result, and I've got a lot more confidence.