

21ST CENTURY COMMUNICATION

LISTENING, SPEAKING, AND CRITICAL THINKING

TEACHERS GUIDE

3



Australia • Brazil • Mexico • Singapore • United Kingdom • United States



**21st Century Communication: Listening,
Speaking, and Critical Thinking
Teacher's Guide 3**

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Welcome to *21st Century Communication: Listening, Speaking and Critical Thinking*. This four-level series uses powerful ideas from TED Talks to teach learners to think critically and communicate with confidence. Through authentic models of effective communication, students build fluency in the listening and speaking skills needed to achieve academic and personal success.

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Teaching a Unit of 21st Century Communication

UNIT OPENER

Each unit begins with an impactful and thought-provoking photograph, **THINK AND DISCUSS** questions, and an overview of the unit content.

The **PHOTO** and **UNIT TITLE** introduce the theme of the unit and aim to capture students' attention and curiosity.

TIPS

Ask students questions about the photo and caption.

- What is the first thing that gets your attention, and why?
- What else do you see?
- What interests you, and why?
- What questions do you have as you look at it?
- Do you like the image? Why, or why not?
- What does the caption say?
- What part of the image does it explain?
- Does it answer any of the questions you had about the image?
- Does it help you understand something else about the image? If so, what?

See the unit-by-unit tips and classroom presentation tool for specific teaching information.

21st Century Skill **Visual Literacy**

Tips for Using Visuals

In addition to the Unit Opener, there are several visuals per unit. Many of them are photos, but they also include infographics and graphic organizers. Using images taps into and builds students' multiple literacies. Being able to read images is an essential 21st century skill. Here are some tips for using the visuals in a unit.

- Have students respond to what they see in the visual; what does it make them think of and why?

- Ask students to explain how a visual helps them understand an exercise or the unit theme.
- Have students cover the caption of an image and then try to guess what the caption is.
- Ask students to explain what they think the message of a visual is, and why.
- Use photos to review and expand target vocabulary by having students describe an image using vocabulary from the current and/or previous unit.

The **THINK AND DISCUSS** questions activate students' background knowledge of the topic and help them personalize and relate to the theme. The **OVERVIEW OF CONTENT** allows you and the students to preview the skills they will learn and practice throughout.

TIPS

- Read, or have a student read, the **THINK AND DISCUSS** questions.
- Have students answer the questions in pairs or small groups before sharing ideas as a whole class.
- If they are not sure how the photo relates to the unit title or theme, read the titles of the Part 1 and Part 2 input and ask them how the image relates to what they will hear in the audio/video input.
- Read, or have a student read, the **OVERVIEW OF CONTENT**.
- Have the students briefly skim the language skills boxes in the unit. Ask them which of the skills they have studied before, what they already know about them, and what they think they will learn about them in the unit.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

PART 1: LISTENING & SPEAKING

PART 1 introduces the listening of the unit. The listening may be one of several genres such as a university lecture, a podcast, an interview, or a student discussion. Where appropriate (and as indicated in unit-by-unit tips), the listening is accompanied by video slides to enhance and clarify the content. The purpose of Part 1 is to prime students for the authentic and inspirational content they will meet in the TED Talk in Part 2.

The **BEFORE YOU LISTEN** section helps students further build schema about the content of the unit. It gets students thinking about and discussing the topic of the listening (top-down processing), and it also familiarizes them with essential vocabulary to understand the listening and do the speaking tasks (bottom-up processing).

TIPS

- For each exercise, read, or have a student read, the directions.
- Elicit from and/or provide to the students any information relevant to the activity (such as definitions of words, examples, relevant background information).
- Put students in pairs or small groups to discuss questions before sharing ideas as a whole class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

21st Century Skill **Communicating and Collaborating**

Tips for Working in Groups

Students have many opportunities to work in pairs or groups through the built-in COMMUNICATE and COLLABORATE exercises. Additionally, individual exercises can be extended into group exercises by

having students share their work. The ability to communicate clearly and to collaborate are essential 21st century skills. Here are some suggestions for arranging diverse pairs and groups, as well as for getting students to work effectively, efficiently, and respectfully during collaborative work throughout the unit.

Arranging Diverse Pairs and Groups

- Have students count off according to how many groups you use. Assign one part of the room to each number, and have the groups convene in their assigned areas. (Alternately, have students “count off” with a set of vocabulary words instead of numbers, and review the meanings of the words with their group members before starting the exercise.)
- Place students of similar levels together, especially when you need to devote more time to working with the lower-level students in a multi-level class.
- Place higher-level students with lower-level students. Tutoring peers reinforces learning for higher-level students, and lower-level students benefit from learning from their peers.

Working in Pairs and Groups

- Have students introduce themselves to anyone they don’t know in order to build a positive learning community. This is especially helpful in large classes.
- Tell students what the end requirements are of the pair or group work, so they know what the expectations of each exercise are (e.g., to share a comment they agreed/disagreed with and why).
- Explain to students that they should not only share their own ideas, but should also ask for their classmates’ opinions about the topic.
- Assign roles so that everyone participates. The *group leader* keeps the conversation on track. The *time keeper* keeps track of the time. The *recorder* takes notes on the discussion. The *reporter* uses the recorder’s notes to report back to the whole class.

VOCABULARY introduces the target vocabulary. Words are selected according to several criteria: frequency, utility, Academic Word List, and CEFR (Common European Framework of Reference for Languages) level. Content-specific words or phrases that are important for comprehension are glossed in *Words in the Lecture*. All of the vocabulary words are on the audio program, so there is always an aural and written model of pronunciation.

TIPS

- Read, or have a student read, the directions before having the students work individually. Then, share answers as a class. Alternately, ask students to compare their work with a partner or small group before sharing as a class.
- Refer students to the online workbook activities for more vocabulary practice.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The VOCABULARY presentation is always followed by a **COMMUNICATE** activity. This is an opportunity for students to show they understand the words and can use them in a familiar context.

TIPS

- Encourage the students to use the words and phrases in bold, which are the targeted vocabulary words.
- Have students work in pairs or small groups before coming back to share as a whole class.
- You may want to go over all of the questions as a class to make sure students understand them, and also provide a model for them.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

21st Century Skill **Independent Learning**

General Tips for Teaching Vocabulary

In *21st Century Communication*, target vocabulary is recycled throughout a unit and

across the series giving students multiple opportunities to work with each word. However, in order to truly learn new words, students need to develop vocabulary learning strategies on their own. The ability to work independently and to be self-directed learners are essential 21st century skills. Here are some tips for helping students to build their word knowledge on their own.

- Have students keep a vocabulary log in which they record the unit vocabulary, including definitions, sample sentences, information about pronunciation, and any other important information (i.e., first-language translation, synonyms and antonyms, and collocations). See example in Independent Student Handbook.
- Have students make flash cards. On one side, they should write the word. On the other side, they should draw a four-square grid and distribute the following information into the squares: definition, first-language translation, sample sentence, synonyms.
- Encourage students to study more than just the definitions of new words. In order to have a deep understanding of new vocabulary, students need to understand meaning, as well as connotation, level of formality, word family, pronunciation pattern, and spelling.

The **LISTEN** section in Part 1 provides level-appropriate content that encourages students to think critically and creatively about the theme of the unit. This section includes two comprehension activities: LISTEN FOR MAIN IDEAS and LISTEN FOR DETAILS. It also includes a LISTENING SKILL presentation and practice, and often a NOTE-TAKING SKILL presentation and practice.

TIPS

- Before having the students LISTEN FOR MAIN IDEAS, remind them that the listening is on a topic they have been discussing, so they should keep in mind what they know about the topic as they listen.
- Read, or have a student read, the directions. Explain that when they listen for main ideas, they listen for the most important points, so

they shouldn't worry if they don't understand everything.

- Play the audio, or video if available. Have students complete the exercise individually, and then go over the answers as a class. Or, have students check their work with a partner before sharing with the class.
- When the LISTEN FOR MAIN IDEAS exercise is accompanied by a slideshow, ask the students how the visuals helped them understand the main ideas of the listening.
- Before having the students LISTEN FOR DETAILS, explain that for this exercise, they need to listen for specific information. Read, or have a student read the directions and the items in the exercise so that students listen with a purpose.
- Play the audio. Have students complete the exercise individually, and then go over the answers as a class. You could also have students check their work with a partner before sharing with the class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **LISTENING SKILL** explicitly teaches a key academic listening skill and provides an example drawn from the listening in Part 1. It gives students a listening strategy to help them better understand the listening in the unit and to develop their overall listening skills. The listening skill may come before or after students LISTEN FOR DETAILS.

TIPS

- Read, or have a student read, the information in the box, and play the audio if included.
- Answer any questions the students may have.
- Read, or have a student read, the directions to the follow-up exercises. Explain to students that they should focus on practicing the specific skill, and not worry if they miss some other information.
- Play the audio. Have students complete the exercises individually, and then go over the answers as a class. Alternately, have students check their work with a partner before sharing with the class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

21st Century Skill **Working with Multimedia**

General Tips for Using Audiovisuals

An audiovisual slideshow presentation accompanies many of the listening inputs in Part 1 to support student learning. As students will be exposed to multimedia presentations of information at school and work, learning how to understand them and determine their effectiveness are essential 21st century skills. Here are some tips for helping students learn with multimedia in the unit.

- Have students watch the slideshow without the audio first to predict the main ideas of the talk.
- After watching the slideshow with the audio, ask the students how the information on the slides did or did not support their understanding of the listening.
- Have the students work in pairs or small groups to discuss how they might change the slideshow to enhance how effectively it supports the message of the speaker(s).

The **NOTE-TAKING SKILL** explicitly teaches a key note-taking skill to help students build their repertoire of note-taking strategies. It focuses students' attention on strategies for taking notes that they can apply to the listening input. The note-taking skill falls either in Part 1 or in Part 2.

TIPS

- Read, or have a student read, the information in the box, and play the audio or video if included.
- Answer any questions the students may have.
- Read, or have a student read, the directions to the follow-up exercises. Explain to students that they should focus on practicing the specific skill, and not worry if they miss some other information.
- Play the audio. Have students complete the exercises individually, and then go over the answers as a class. You could also have students check their work with a partner before sharing with the class.
- Emphasize that note taking is an individual skill and therefore their notes will likely vary from

their classmates'. The key to effective and efficient note taking is for students to develop a comprehensible system that works for them.

- Refer students to the online workbook for more note-taking practice.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **AFTER YOU LISTEN** section gives students the opportunity to think critically about and discuss the ideas that have been presented. It includes presentation and practice of both a SPEAKING and PRONUNCIATION SKILL. This section also typically includes the unit INFOGRAPHIC, although it may fall in Part 2. Students are asked to interpret the visual and are given the opportunity to personalize. Refer students to the online workbook for more listening practice.

21st Century Skills **Critical Thinking**

Tips for Teaching Critical Thinking

Students have ample opportunities for critical thinking through built-in THINK CRITICALLY exercises that appear throughout a unit. These exercises ask students to analyze, apply, compare, evaluate, infer, interpret, personalize, reflect, support, and synthesize, among other skills. Thinking critically is an essential 21st century skill. Here are some tips for helping students to think critically throughout a unit.

- Have students think about and share what they liked/didn't like and agreed/disagreed with about the listening prior to completing the exercises.
- Have students respond to the listening from a different perspective. How would someone much older react to the listening? Much younger? Of a different gender? An elected official?
- Have students make text connections. Ask them to relate the listening input and/or follow-up exercises to something in their own lives (text-to-self connection), to another text they have heard, watched, or read (text-to-text connections), and to other real-world events in the past and/or present (text-to-world connections).

The **SPEAKING SKILL** explicitly teaches a key speaking skill to help students express their ideas more effectively. It focuses students' attention on strategies the speakers use in the listening input in Part 1, and gives them opportunities to immediately practice the skill in discussion with classmates.

TIPS

- Read, or have a student read, the information in the box, and play the audio if included.
- Answer any questions the students may have.
- Read, or have a student read, the directions to the follow-up exercises. Explain to students that they should focus on practicing the specific skill presented.
- Have students complete the exercises individually or in pairs/small groups, as indicated. Then, go over student responses as a class.
- Refer students to the online workbook activities for more speaking practice.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **PRONUNCIATION SKILL** explicitly teaches a key pronunciation skill to help students better understand the listening in the unit. Additionally, it helps them to be better understood by their listeners when speaking and/or presenting.

TIPS

- Read, or have a student read, the information in the box, and play audio if included.
- Answer any questions the students may have.
- Read, or have a student read, the directions to the follow-up exercises. Explain to students that they should focus on practicing the specific skill presented.
- Have students complete the exercises individually or in pairs/small groups, as indicated. Then, go over student responses as a class.
- Refer students to the online workbook activities for more pronunciation practice.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **INFOGRAPHIC** is additional content relevant to the theme presented visually in a diagram, chart, graph, or other visual. Students interpret and discuss the information in the visual, deepening their understanding of the topic. It also gives students the opportunity to build the skill of interpreting visual information.

TIPS

- Read, or have a student read, the directions.
- Elicit from and/or provide to the students any information relevant to the exercise (such as explanations of key terms, what's being depicted or compared, what forms of measurement are being used, etc.)
- Have students work in pairs/small groups, as indicated, before sharing ideas as a whole class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

as definitions of words, examples, relevant background information).

- Put students in pairs or small groups to discuss questions before sharing ideas as a whole class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **VOCABULARY** section in Part 2 introduces the target vocabulary, which is chosen according to the same criteria as in Part 1. All target words are on the audio program so students can hear the correct pronunciation. Content-specific words or phrases that are important for comprehension are glossed in *Words in the Talk*. Refer students to the online workbook for more vocabulary practice. For step-by-step teaching strategies, please refer to the VOCABULARY tips in Part 1.

PART 2: TED TALKS

PART 2 introduces the TED speaker and idea worth spreading. Students watch a carefully curated and sometimes edited TED Talk to inform, inspire, and excite. Using the skills they have learned in Part 1, students are ready to enjoy and be motivated by authentic talks from a wide range of subject areas. Students are encouraged to think critically about the topic and share their ideas about the talk.

The **BEFORE YOU WATCH** section helps students build and activate background knowledge about the TED speaker and the idea worth spreading. The sequence of exercises loosely corresponds to that of Part 1, further encouraging students to use the prior knowledge they established in the first part of the unit.

TIPS

- For each exercise, read or have a student read the directions.
- Elicit from and/or provide to the students any information relevant to the activity (such

21st Century Skills **Creative Thinking**

Tips for Reviewing Vocabulary

In order for students to really learn new vocabulary words, they need repeated exposure to and practice with them. While students have the responsibility to study the words at home, it is beneficial to provide repeated exposure to the words in class, as well. Here are some suggestions for interactive games that can be used throughout the unit to review and get students thinking about words in new ways.

- **BINGO:** Have students draw a three-by-three table in their notebooks. While they do this, write nine vocabulary words (from Part 1 and/or 2) on the board. Direct students to write one word in each box of their table in any order they want. Then, call out the definitions of the words in random order. The first student to get three words in a row (vertically, horizontally, or diagonally) calls BINGO! For an extra challenge, ask the student to use the three words accurately in sentences.
- **Spin a Story:** Have students work individually, or in pairs/small groups, to describe an image in the unit using vocabulary words from Part 1 and/or 2. For this exercise, the students

should pay particular attention to meaning and use. Set a time limit. The winning student or pair/small group is the one that used the most words correctly.

- **Tic-Tac-Toe:** Draw a three-by-three grid on the board and number each square 1–9. The numbers correspond to nine vocabulary words you want to review. Divide the students into two teams, Team X and Team O, and pick one team to go first. The first team picks a number, and you tell them a word. As a group, they must come up with a sentence in which the word is used and pronounced correctly. If their use and pronunciation of the new word is correct, they get to mark the box with their letter (X or O), and then the other team gets a turn. If their use and/or pronunciation is incorrect, they do not get to mark the box, and the turn moves to the other team. The first group to get three Xs or three Os in a row (vertically, horizontally, or diagonally) wins the game. You may choose to have the students spell the words in this game, too.

The **WATCH** section in Part 2 presents the TED Talk, the culminating listening experience that students have been building to throughout the unit. In addition to watching for MAIN IDEAS and DETAILS, students also complete exercises in which they apply the skills they learned in Part 1 to help them better understand and take notes on the TED Talk.

TIPS

- Before having the students WATCH FOR MAIN IDEAS, remind them that the TED Talk is on a topic they have been discussing, so they should keep in mind what they know about the topic as they watch. Additionally, explain to them that the TED speaker also exemplifies the language skills they have been learning, so they should apply their knowledge of these skills to help them better understand (and take notes on) the TED Talk.
- Read, or have a student read, the directions. Explain that when they watch for main ideas, they watch for the most important points, so they shouldn't worry if they don't understand

everything. This is especially important when listening to authentic English delivered at natural speeds. Remind them that they will watch the talk more than once.

- Play the TED Talk. Have students complete the exercise individually, and then go over the answers as a class. Or, have students check their work with a partner before sharing with the class.
- Before having the students WATCH FOR DETAILS, explain that for this exercise, they need to watch for specific information. Read, or have a student read, the directions and the items in the exercise so that students watch with a purpose.
- Play the TED Talk. Have students complete the exercise individually, and then go over the answers as a class. Alternately, have students check their work with a partner before sharing with the class.
- Before having students complete the remaining exercises, explain to them that some of the exercises are opportunities for them to apply the skills they learned in Part 1.
- Read, or have a student read, the directions. When appropriate, elicit from the students which skills from Part 1 they can apply to each exercise. (Use the classroom presentation tool to display the relevant skill boxes from Part 1.)
- Have students complete the exercises individually, and then go over the answers as a class. You could also have students check their work with a partner before sharing with the class.
- Refer students to the online workbook for more practice watching the talk.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **AFTER YOU WATCH** section provides opportunities for students to reflect on and think critically about the idea worth spreading in the TED Talk, and to deepen and expand their understanding of the theme of the unit.

TIPS

- Put students in pairs or groups to complete the AFTER YOU WATCH exercises.
- Read, or have a student read, the directions to each exercise. When appropriate, elicit from

the students which skills from Part 1 they can apply to each exercise. (Use the classroom presentation tool to display the relevant skill boxes from Part 1.)

- When necessary, ask students to complete part of an exercise individually before sharing with their partners or group members. Then, share ideas as a whole class.
- Refer students to the online workbook for more practice responding to the talk.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

EXPAND YOUR VOCABULARY focuses on additional useful phrases and expressions from the TED Talk. Students watch an excerpt from the talk and guess the meaning of the phrase in the Classroom Presentation Tool or in their Online Workbook. While these phrases are not essential to understanding the talk, they will help students expand their vocabulary with everyday expressions.

TIPS

- Read, or have a student read, the directions. Before watching the excerpts, have students share the meanings of any of the words or expressions that they already knew or made a guess at while watching the TED Talk.
- From the Classroom Presentation Tool or DVD, play the video. Do the activity as a class. For individual practice, send the students to their Online Workbook.
- Refer students to the online workbook for more Expand Your Vocabulary practice.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

PUT IT TOGETHER gives students the opportunity to consolidate the ideas, language, and skills presented and practiced throughout the unit. Students are first asked to synthesize ideas from Part 1 and Part 2, a task that helps prepare them for the final assignment. The synthesis activity is often accompanied by a graphic organizer to help them organize their ideas visually. The synthesis activity is followed by two main parts: **COMMUNICATE** and **REFLECT**.

TIPS

- Read, or have a student read, the directions.
- Elicit from and/or provide to the students any information relevant to the exercise (such as set-up of the graphic organizer, what kinds of information go in each part, etc.)
- Have students work in pairs or small groups, as indicated, and then go over their responses as a class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **COMMUNICATE** section features the end-of-unit assignment and provides the necessary support for students to be successful in their presentation.

The end-of-unit **ASSIGNMENT** is a presentation related to the unit theme and idea worth spreading. The presentation takes different forms, from individual and group presentations to role-plays and panel discussions. Students use the ideas from the listening input from Part 1 and the TED Talk from Part 2 as a springboard for talking about their personal connection to the topic. They apply the language skills they have learned to make their presentation more effective.

TIPS

- Read, or have a student read, the assignment. Explain that the assignment is meant to give them a chance to apply the ideas, language, and skills learned in the unit.
- To check students' comprehension of the assignment, ask them to restate in their own words what they need to do (discuss something related to the unit theme), how they need to do it (in the form of a presentation), and why (to demonstrate their ability to talk about the theme of the unit and use the skills learned in the unit).
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

The **PREPARE** section generally starts with the PRESENTATION SKILL, TED-inspired strategies for effective communication and presentation. These skills are meant to give students confidence and

specific tools to use in their presentations. The presentation skill is often exemplified in the TED Talk. PREPARE also introduces students to the evaluation rubric. They will use the rubric to provide feedback to their peers, encouraging them to be active audience members. Teachers may also use this rubric to provide a more formal assessment of student work.

TIPS

- Read, or have a student read, the PRESENTATION SKILL. Play any corresponding video examples.
- Provide any other relevant information or examples.
- Read, or have a student read, the directions to the follow-up exercises. Explain to students that they should practice the PRESENTATION SKILL while preparing for their end-of-unit presentation.
- Have students work individually, or in pairs/ small groups as indicated. Play the video if included.
- Go over student responses together as a class.
- Have students read the rubric individually, or together as a class.
- To check that the students understand the rubric, ask them what the categories of assessment are, what the highest score for each category is, and how they can use the rubric as a checklist when preparing for their presentation.
- Refer students to the online workbook for a review of the unit.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

When students **PRESENT**, they demonstrate their ability to discuss a topic related to the theme of the unit and the idea worth spreading while incorporating the relevant skills and vocabulary learned from the unit.

TIPS

- Organize the order in which students will present through various methods: Arrange presentations in alphabetical order by students' first or last name (using the earliest letter out of all of the students in a group for group presentations); have students draw numbers to get the order of their presentations; or have students choose from available presentation spots on a sign-up list.
- After all the presentations are complete, have students work in small groups to give feedback to one another on their presentations using the rubric. Then, go over the student responses as a class.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

21st Century Tips **Interacting Effectively with Others**

Tips for Student-to-Student Feedback

Students need to be able to provide and respond to critique in respectful ways both in class and in the workplace. Here are some tips for helping students give and receive feedback on presentations in effective ways.

Giving Feedback

- Have students ask their classmates how they think they did overall before providing feedback.
- Ask students to use “I” instead of or before “you” to emphasize that they are expressing their opinions. For example, they should say, “I think you could improve your introduction,” instead of, “You could improve your introduction.”
- Explain the sandwich method of providing feedback to the students. First, they should express something that their classmate did well. Next, they present an area for improvement. Then, they sandwich the negative feedback with a comment about another thing their classmate did well.
- Ask students to always provide examples or reasons for their opinions so that their

classmates have a clear idea of why they did well, or not so well, in certain areas.

- Have students support their opinions with specific information in the rubric.

Receiving Feedback

- Explain to students that when they receive feedback, they should listen and not feel the need to respond immediately. They should listen to their classmates' opinions, and ask clarifying questions, and then thank their classmates for their feedback.
- Explain to students that they do not need to agree with their classmates' opinions. Ultimately, they decide what feedback to accept and reject. However, it is not necessary to tell their classmates what they plan to do with the feedback.
- Ask students to have an open mind. Their classmates view their presentations from many different perspectives, and their feedback will reflect these various points of view. Feedback may unexpectedly highlight an area of strength or weakness for reasons students may never have considered.

REFLECT provides students with an opportunity to contemplate their progress toward acquiring the skills and vocabulary in the unit before moving on to the next unit.

TIPS

- Read, or have a student read, the directions.
- Explain that they should make an honest self-assessment so they know what they have accomplished and what they still need to improve.
- To encourage students to continue to improve on weaker areas, have them write some learning strategies and goals next to the areas they want to develop.
- See the unit-by-unit tips and classroom presentation tool for specific teaching information.

Using the Classroom Presentation Tool

The classroom presentation tool (CPT) provides a central focus during lessons and a dynamic way to use the student book material. It integrates a variety of teaching resources, including audio, video, and interactive student activities that can easily be used on a computer or Interactive White Board (IWB). Additionally, *21st Century Communication* provides Conversation Starters, Answers, and Skill Checks to support teachers as they start an exercise, work through an exercise, or review skills.



You can play the audio that accompanies activities directly from the Classroom Presentation Tool. Simply mouse over and click on the audio icon, and an audio player will open. Click on Script to view the karaoke-style script. Use the player button to pause, stop, or replay the audio at any time.



You can play the videos of the Part 1 slideshows and Part 2 TED Talks that accompany activities directly from the Classroom Presentation Tool. Simply mouse over and click on the video icon, and the video player will open. Subtitles are available for all videos except the Part 1 slideshows and Expand Your Vocabulary and Presentation Skill videos. Click On or Off to turn the subtitles on or off. Use the player button to pause, stop, or replay the video at any time. If audio and a video slideshow are both available for exercises in Part 1, play the video before doing the interactive activity (described below). Only the audio will be available upon launching the interactive activities.



Interactive activities are available in Part 1, Part 2, and Put It Together for all exercises with discrete answers, such as multiple choice, True/False, and matching questions. Students or teachers can click through these activities to complete an exercise together or to review the answers. Interactive activities provide a more dynamic way to engage with the content of the student book, and a fast

and effective way to relay answers to students. Relevant audio and video accompanies these activities, but only the audio is available with the interactive activities in Part 1. Video accompanies most activities in Part 2.



Conversation Starters are available in Part 1, Part 2, and Put It Together for pair or small group exercises that include, but are not limited to, students communicating their opinions and ideas, predicting and reflecting on content, and personalizing content. They help students start discussions by providing them with a model exchange before they start communicating in pairs or small groups. Additionally, they model critical thinking.



Answers are available in Part 1, Part 2, and Put It Together for questions that are more open-ended. These model level-appropriate answers that students can check their own responses against after they finish an exercise. Exercises with Answers include, but are not limited to, responding to questions about an image, audio, video, or speaker; interpreting an infographic; taking notes; and synthesizing information.



Skill Checks are available in Part 2 and the beginning of Put It Together for exercises that apply the listening, note-taking, speaking, and pronunciation skills students learned in Part 1. They are images of the relevant skill boxes available to display at point-of-use. The Skill Checks reinforce student learning by reviewing the skills at the moment they are needed. In the final part of Put It Together, no Skill Checks are provided, affording students the opportunity to make the connections themselves.

UNIT 1 Bringing Dreams to Life

PART 1

Would-Be-Entrepreneurs: Listen Up!!!

Listening

Identify Main Points and Story Examples

Note Taking

Use Abbreviations

Pronunciation

Intonation and Pauses: Continuing and
Concluding

Speaking

Use a Story Example

PART 2

TED TALKS

Bel Pesce

Five ways to kill your dreams

PUT IT TOGETHER

Communicate

Give an Individual Presentation

Presentation Skill

Pause Effectively

UNIT THEME

Unit 1 explores the reality of achieving your dreams by highlighting the difficulties and mistakes people tend to face.

ACADEMIC TRACK

Business

UNIT OPENER

Time: 5–10 min

Ask guiding questions, such as:

- What is this place? What do you see? (*It's a work space and/or art studio. There are bicycle helmets, art supplies, a computer*)
- Would you like to work in a space like this?

THINK AND DISCUSS (page 3)

Possible answers:

1. *The title is about achieving dreams.*
2. *Danielle started six companies based on her business ideas/dreams.*

PART 1

Would-Be-Entrepreneurs: Listen up!!!

► Slideshow available.

The listening is a podcast on a show called *Business Talk*, which gives advice to business owners. This episode discusses the harsh realities of running a successful business.

BEFORE YOU LISTEN

Time: 30–40 min

A COMMUNICATE (page 4)

21C SKILL Reason Effectively. Have students consider how external factors might impact the success of a small business owner. Ask:

- What different business resources are available in different parts of the world?
- Is it possible for anyone from any family background to become a successful business owner? Why or why not?

B 1.2 THINK CRITICALLY Predict. (page 4)

Audio: 2:14 min

Check understanding of the term *entrepreneur*:

- Can you name a famous entrepreneur? (*Mark Zuckerberg, Steve Jobs*)

VOCABULARY

C 1.3 (page 5) Audio: 1:44 min

D COMMUNICATE (page 6)

For more practice, go to MyELT.

LISTEN  Time: 40–50 min

learnmore Ask students: Where do students usually live after they graduate in your country?

E   **1.4**  **1.1 LISTEN FOR MAIN IDEAS**

(page 6) Audio: 5:33 min Video: 5:31 min

WORDS IN THE PODCAST

Check understanding of *hours straight*:

- How do you feel after you work on a school project for many *hours straight*?

F   **1.5 LISTEN FOR DETAILS** (page 7)

Audio: 5:43 min

LISTENING SKILL  **1.6 Identify Main Points and Story Examples** (page 8)

Audio: 0:33 min

Ask: Why are stories powerful ways to illustrate main points?

G  **1.7** (page 8) Audio: 2:44 min 

NOTE-TAKING SKILL  **Use Abbreviations** (page 8)

Ask students about common ways to abbreviate words when taking notes. Write their ideas on the board and have them make a reference list in their notebooks. Encourage students to continually add new abbreviations they find helpful.

H  **1.7 LISTEN AND TAKE NOTES**

(pages 8–9) Audio: 2:44 min 

Draw the chart on the board and ask volunteers to write the abbreviations they used. Review abbreviations as a class.

AFTER YOU LISTEN  Time: 25–35 min**I THINK CRITICALLY Interpret an Infographic.** (page 9) 

Check understanding of the infographic:

- What does the infographic show? (*a comparison of the failure rates of independent restaurants and retail stores*)

J (page 10)

Have students read the questions and answers before taking the quiz. Review any confusing words or concepts.

K THINK CRITICALLY Analyze. (page 10) 

21C SKILL Analyze Beliefs. Challenge students' assumptions as the class reviews answers to items in exercise J.

- (#1) What if you lose all your money? Isn't it better to risk it all than not risk anything?
- (#2) If you run your own business, can you really separate your work and home life?
- (#4) Is saving money always good? Don't you need to spend money to make money?
- (#5) Is failure always negative? How can it be a good thing for entrepreneurs?

For more practice, go to MyELT.

SPEAKING  Time: 35–45 min

SPEAKING SKILL  **Use a Story Example** (page 11)

For practice with gerunds, go to MyELT.

L THINK CRITICALLY Support Ideas. (page 11)

Remind students to use abbreviations in their notes.

M COMMUNICATE (page 11)

EXPANSION Have students retell their story to develop fluency. Ask students to stand in two lines facing each other. One line is "A," and the other line is "B." Each student should be facing one classmate. Partners take turns sharing their stories for two minutes each. Keep time. After total time is up, ask Line A to move one partner to the left. The student at the end of Line A will need to move to the front. Repeat task two or three times.

PRONUNCIATION SKILL  **1.8 Intonation and Pauses: Continuing and Concluding**
(page 12) Audio: 0:25 min

N  **1.9** (page 12) Audio: 0:36 min 

O  **1.9** (page 12) Audio: 0:36 min

P THINK CRITICALLY Analyze. (page 12)

Have students work with a different partner than the one they worked with for O.

For more practice, go to MyELT.

PART 2 TEDTALKS

5 ways to kill your dreams

BEL PESCE'S idea worth spreading is that we are more likely to achieve our dreams if we follow five basic principles.

BEFORE YOU WATCH  Time: 35–45 min

A COMMUNICATE (page 13)

Check understanding of *kill* in the title:

- What does *kill* mean? (*to stop or cancel something*)
- How can dreams be *killed*? (*if people's beliefs/actions cause them to fail at achieving their dreams*)

B THINK CRITICALLY Predict. (page 14) 

To clarify, write on the board: What are three ways people can achieve their dreams?

C COLLABORATE (page 14) 

EXPANSION Have two pairs of students form a small group of four and compare their pieces of advice. They should combine their ideas into one list. Have a volunteer from each group share their list with the class.

VOCABULARY

D  **1.10** (pages 14–15) Audio: 1:44 min

Have pairs of students write the part of speech next to each vocabulary word. Remind them to consider the context before making their guess. Review answers as a class:

1. Overlap (v), 2. Humble (adj), 3. Infinite (adj), 4. Revenue (n), 5. Sequel (n), 6. Peak (n), 7. Journey (n), 8. Trip (v), 9. Guaranteed (adj), 10. Prior (adj)

E COMMUNICATE (page 15)

For more practice, go to MyELT.

WATCH  Time: 35–45 min

F  **1.2 WATCH FOR MAIN IDEAS** (page 16)

Video: 6:16 min

Have a volunteer read the sentences aloud before the class watches the talk.

G  **1.3 WATCH FOR DETAILS** (pages 16–17)

Video: 6:34 min 

H  **1.4 IDENTIFY EXAMPLES** (page 17)

Video: 1:48 min  

Draw the chart on the board and ask volunteers to write the abbreviations they used. Review abbreviations as a class. Encourage students to add any new ones to their reference list. Ask students how Pesce could have used the other common expressions in the Listening Skill box on page 8 to introduce her stories.

I COMMUNICATE (page 17) 

Remind students to state the main point before the story, and restate it after.

J  **1.5 EXPAND YOUR VOCABULARY**

(page 17) Video: 3:02 min

Check understanding of the vocabulary words:

- When is everything set for a vacation? (*when reservations are made; when bags are packed*)
- What market are cellphones, tablets, and laptops part of? (*mobile technology*)
- How can an employer attract good talent? (*offer good benefits and a fun workplace*)
- When might you say, “I made it!” (*when you finish a marathon or get a diploma*)
- How can you turn negative feelings about doing chores into positive ones? (*Listen to music; reward yourself when finished.*)
- What is something you will do today for sure? (*Use English; eat something; sleep.*)

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 20–25 min

K COMMUNICATE

L THINK CRITICALLY Reflect.



PUT IT TOGETHER



Time: 20–30 min

A THINK CRITICALLY Synthesize.

Check understanding of the Venn diagram:

- Why is “More people today want to become entrepreneurs” on the left? (*It’s a main point from the podcast only.*)
- Why is “Don’t believe in overnight success” in the middle? (*It’s a main point from both the podcast and TED Talk.*)
- Why is “No one else has the perfect answers for your life” on the right? (*It’s a main point from the TED Talk only.*)

B THINK CRITICALLY Apply.



21C SKILL Work Creatively. Have students write a short “I am” poem. Write the following prompts on the board and ask students to work individually to complete the poem:

- I am (two special characteristics you have)
- I dream (something you dream will happen)
- I plan (something you will make an effort to do to achieve your dream)
- I know (something you believe)
- I am (the first line of the poem repeated)

Share your own “I am” poem as a model. Have students share their poems in small groups.

COMMUNICATE



Time: 40–50 min + presentations

ASSIGNMENT Give an Individual

Presentation on how NOT to learn a foreign language. (page 19)

ALTERNATE ASSIGNMENT Assign students to work in groups of three. Each student is responsible for presenting a main point and supporting story example. Alternative topics: How NOT to get into college; How NOT to stay healthy.

PREPARE

PRESENTATION SKILL

▶ 1.6 Pause

Effectively

Video: 1:10 min

Have students develop and share their personal pausing strategies, such as taking a deep breath, smiling, redirecting their gaze, or slowly pacing to the other side of the presentation space.

▶ 1.7 (page 20)

Video: 1:02 min

EXPANSION Have pairs of students take turns reading the marked script, pausing as Pesce does. Ask volunteers to read the text aloud for the class. Have the class vote on who imitates Pesce’s speaking patterns best.

D COLLABORATE

Have volunteers share group ideas with the class. Take notes on the board for reference.

E THINK CRITICALLY Support Ideas.

(page 21)

F (page 21)

PRESENT

G (page 21)

Have students submit notes they take on one presentation to review their progress with using abbreviations.

H THINK CRITICALLY Evaluate.

(page 21)

REFLECT

REFLECT BOX

(page 21) Have students sort the words by part of speech to review usage.

- **Adjectives:** *humble, infinite, prior, striking*
- **Adverbs:** *constantly*
- **Nouns:** *bankruptcy, investor, journey, overnight success, peak, revenue, sequel, wealth*
- **Verbs:** *estimate, guarantee, overlap, run a business, settle down, catch up on, trip*

For more practice, go to MyELT.

ANSWER KEY Unit 1

THINK AND DISCUSS (page 3)

1. Answers will vary. (E.g., The title is about achieving dreams.) 2. Answers will vary. (E.g., Danielle started six companies based on her business ideas/dreams.)

PART 1

Would-Be-Entrepreneurs: Listen Up!!!

A COMMUNICATE (page 4)

1. Answers will vary. (E.g., Type of business: a small gourmet food shop; a takeout restaurant; a grocery store with specialty products. Cheap or expensive products: Probably expensive because it looks like they carry gourmet products in small quantities (not like a large supermarket). Also, the cheeses are in a special case, which usually indicates that they are expensive—often imported from other countries.) 2. Answers will vary. (E.g., Types of small businesses: private or family-owned restaurants, boutiques/clothing stores, dry cleaners, Laundromats, parking lots, car repair shops, software consulting, bakeries, and bed and breakfast inns. Qualities of small business owners: hard working, good with money, willing to take risks, independent, good leadership/managerial skills, creative, practical, disciplined, and self-confident. 3. Answers will vary.

B THINK CRITICALLY Predict. (page 4)

Answers will vary. (E.g., “Would-be” implies that his listeners are not entrepreneurs (yet), and “listen up” implies giving advice. He’s probably going to talk about the difficulties involved in starting your own business and perhaps advise listeners against it, or give them advice about how to avoid or deal with problems.)

C VOCABULARY (page 5)

1. catch up on
2. constantly
3. settle down
4. wealth
5. investor
6. runs the business
7. overnight success
8. striking
9. estimate
10. bankruptcy

D COMMUNICATE (page 6)

Answers will vary.

E LISTEN FOR MAIN IDEAS (page 6)

1. T
2. F
3. T
4. T

F LISTEN FOR DETAILS (page 7)

Segment 1

1. Facebook, 24, 42.5 billion
2. difficult, rapid
3. television, investors
4. Bill Gates

Segment 2

5. a café, seven
6. free time

Segment 3

7. one third, (one) half
8. 30, bankruptcy

Segment 4

9. marriage/family life
10. divorced, chose

G (page 8)

Main point #1: It is very hard work to have your own business.

Main point #2: Answers will vary. (E.g., There is no guarantee of becoming rich as a business owner.)

Main point #3: Answers will vary. (E.g., You have to make difficult choices between family and work.)

H LISTEN AND TAKE NOTES (pages 8–9)

Answers will vary. Possible answers:

	WHO?	WHAT KIND OF BUSINESS?	WHAT ARE THE PROBLEMS?
Example 1:	Rob- Fr chef	café, brkfst + lnc	100 hrs/wk, 7 days/wk clsd Sun, but pprwrk lng hrs = x free time
Example 2:	Gail H. + hsbd	dssrt co- Just Dssrts	bad bus decsns = bnkrpt
Example 3:	Tony- sftwr + med entrep	TV show	no \$, 2 yng chl, wife made him choose fam or bus

I THINK CRITICALLY Interpret an Infographic. (page 9)

1. The failure rate is up to 80%. They fail because of poor management, tough competition, and bad marketing. 2. 30% fail within the first year. Answers to why they fail will vary. (E.g., They might fail because the owners don't have enough time or money to put into the businesses.) 3. Answers will vary.

J (page 10)

Answers will vary.

K THINK CRITICALLY Analyze. (page 10)

1. Answers will vary. (E.g., 1. c or d; 2. d; 3. c or d; 4. d; 5. c or d; 6. c or d) 2. Answers will vary. 3. Answers will vary.

L THINK CRITICALLY Support Ideas. (page 11)

Answers will vary.

M COMMUNICATE (page 11)

See exercise L.

N (page 12)

Warning: / This is not a reality TV show. /
It is just plain reality. /
First, running a business is hard work. / Really
hard work. / 100 hours a week of hard work. /
—At least. /
Seven days a week of hard work. / No kidding. /
Just ask Robert. /
Robert is a French chef who owns a café
serving breakfast and lunch. /

O (page 12)

See answers to exercise N.

P THINK CRITICALLY Analyze. (page 12)

Answers will vary.

PART 2 TED TALKS

5 ways to kill your dreams

A COMMUNICATE (page 13)

Answers will vary. (E.g., People do not usually want to "kill their dreams." It is unlikely that the speaker wants to teach people how to do that. The title is probably ironic; it means the opposite of what it says.)

B THINK CRITICALLY Predict. (page 14)

Answers will vary.

C COLLABORATE (page 14)

Answers will vary.

D VOCABULARY (pages 14–15)

1. c 2. b 3. a 4. b 5. a 6. b 7. a 8. a
9. c 10. a

E COMMUNICATE (page 15)

Answers will vary.

F WATCH FOR MAIN IDEAS (page 16)

3, 4, and 5

G WATCH FOR DETAILS (pages 16–17)

Segment 1

1. Answers will vary. (E.g., By taking life and education seriously for 17 years)

Segment 2

2. Answers will vary. (E.g., Choices you will have to make)

3. Answers will vary. (E.g., Make mistakes)

4. Answers will vary. (E.g. Decision-making)

Segment 3

5. Yes

6. Answers will vary. (E.g., To work hard for more success)

Segment 4

7. Yours

8. Answers will vary. (E.g., Celebrate your achievement.)

H IDENTIFY EXAMPLES (page 17)

Answers will vary. Possible answers:

SIGNAL	NOTES ON STORY
You know the story, right?	-tech guy, built mob app, sold fst for \$\$\$ -30 apps, has mstrs/PhD, wrkd 20 yrs
I myself have a story	-hml fam, 2 wks ← ddln MIT strtd app, got in -17 yrs took lf + edu srslly

I COMMUNICATE (page 17)

See answers to exercise H.

J EXPAND YOUR VOCABULARY (page 17)

1. b 2. b 3. c 4. c 5. a 6. b

K COMMUNICATE (page 17)

1. Answers will vary. (E.g., She presents the information as a list of things NOT to do, rather than the more usual way of presenting advice by telling people what to do.) 2. Answers will vary.
3. Answers will vary. 4. Answers will vary.

L THINK CRITICALLY Reflect. (page 17)

1. Answers will vary. (E.g., She uses obvious pauses and rising and falling intonation; she speaks slowly; she repeats her main points; she uses examples that are easy to understand and relate to; she uses very clear signals; she restates all of her main points at the end of her talk.) 2. Answers will vary.

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 18)

Main points from the podcast: Answers will vary. (E.g., More people today want to become entrepreneurs; Running a business is hard work; There is a huge risk of failure; You will have to make difficult decisions that may negatively affect your family.)

Main points from the TED Talk: Answers will vary. (E.g., No one else has the perfect answers for your life; Make your own decisions; Don't settle; Take responsibility for the faults in your ideas; Focus on the journey, not just the goals.)

Main points from both: Answers will vary. (E.g., Don't believe in overnight success; You have to work hard to be successful; You have to make decisions; There is always a risk of failure.)

B THINK CRITICALLY Apply. (page 18)

Answers will vary.

C (page 20)

Answers may vary. Possible answers:

And one last tip,/and this one is really important as well:/Believe that the only things that matter are the dreams themselves./Once I saw an ad,/ and it was a lot of friends, they were going up a mountain, it was a very high mountain, and it was a lot of work, you could see that they were sweating and this was tough, and they were going up, and they finally made it to the peak,/ and of course, they decided to celebrate, right? I'm going to celebrate, so, "Yes! We made it, we're at the top!"/Two seconds later,/one looks at each other and says, "Okay, let's go down."/ Life is never about the goals themselves./Life is about the journey.

D COLLABORATE (page 20)

Answers will vary.

E THINK CRITICALLY Support Ideas. (page 21)

Answers will vary.

F—REFLECT (page 21)

Answers will vary.

UNIT 2 Say It Your Way

PART 1

Emoji and Emoticons: or ?

Listening

Listen for Explanations of Words and Terms

Note Taking

Focus on Main Points

Speaking

Explain Words and Terms

Pronunciation

Compound Words

PART 2

TED TALKS

Erin McKean

Go ahead, make up new words

PUT IT TOGETHER

Communicate

Give a Pair Presentation

Presentation Skill

Encourage Audience Participation

UNIT THEME

Unit 2 explores how modern-day communication methods are affecting our ability to share feelings and express complex ideas.

ACADEMIC TRACK

Linguistics & Communication

UNIT OPENER

Time: 5–10 min

Ask guiding questions, such as:

- What is this a picture of? (*people painting on a wall; people expressing themselves through art*)
- What are your favorite ways to express your feelings?

THINK AND DISCUSS (page 23)

Possible answers:

1. *I express myself more easily in writing because I have time to think first.*
2. *There are ways other than speaking and writing to express yourself, such as through art.*

PART 1

Emoji and Emoticons: or ?

Slideshow available.

The listening is an episode of a podcast series called *Communicating in the 21st Century*. The host discusses emoji and emoticons and how their use is affecting our communication.

BEFORE YOU LISTEN

Time: 30–40 min

A COMMUNICATE (page 24)

Have students explain any emoji and emoticons they use. Encourage them to draw them on the board, or show them on their phone or computer.

B THINK CRITICALLY Predict. (page 24)

VOCABULARY

C 1.11 (page 25) Audio: 1:18 min

D COMMUNICATE (page 26)

For more practice, go to MyELT.

LISTEN ⏴ Time: 35–45 min**E** ⏴ 1.12 ► 1.8 **LISTEN FOR MAIN IDEAS** (page 27) Audio: 4:53 min Video: 4:48 min

To ensure students understand how to complete Exercise E, model the activity. Say: The Internet makes people smarter by giving them access to more information. Ask: What is a contrasting point of view? Have students share ideas with the class. (*The Internet makes people lazier because they work less to solve problems and find answers.*)

WORDS IN THE PODCAST

Check understanding of *locust* and *pollinate*:

- How do *locusts* destroy crops? (*They eat the leaves and weigh them down.*)
- Which insect *pollinates* flowers? (*bees*)

F (page 27)**G** ⏴ 1.12 **LISTEN FOR DETAILS** (page 27)

Audio: 4:53 min

LISTENING SKILL Listen for Explanations of Words and Terms (page 28)

Have small groups of students finish the following sentence prompts to gain a deeper understanding of analogies:

- Falling in love is like _____.
- The human body is like _____.
- Leaving home for the first time is like _____.
- Learning English is like _____.

For practice with the passive voice, go to MyELT.

H ⏴ 1.13 (page 28) Audio: 2:30 min**NOTE-TAKING SKILL** Focus on Main Points (page 29)**I** ⏴ 1.14 (page 29) Audio: 1:11 min**AFTER YOU LISTEN** ⏴ Time: 25–35 min**J** **THINK CRITICALLY** **Compare.** (page 30)

Write examples of student answers on the board to illustrate the variety of ways notes can be taken.

K **COLLABORATE** (page 30) ⚡

Ask students if there are any emoticons or emoji that don't exist but should. Have volunteers draw their ideas on the board. Remind students that examples must be appropriate.

L (page 30)

EXPANSION Have each student draw a new emoji message on the board. Then have them write an emoji reply to two classmates' messages, and include the English translation. Ask the writers of the original messages if their classmates understood them correctly.

For more practice, go to MyELT.

SPEAKING ⏴ Time: 15–20 min**SPEAKING SKILL** Explain Words and Terms (page 31)**PRONUNCIATION SKILL** ⏴ 1.15 Compound Words (page 31) Audio: 0:30 min

Point out that this stress rule generally applies to compound nouns, not compound adjectives (with the exception here of **heart-broken**). Compound adjectives typically have stress on both words (**hand-made**) or on the second word (**old-fashioned, well-known**).

EXPANSION Ask students if there are compound words in their native language(s). Elicit examples and have students explain the words. Then have them share any stress rules that guide pronunciation of those compound words.

M (page 31)

Elicit appropriate ways to correct someone. (*I heard you stress the second, not the first syllable. I think you stressed the wrong syllable.*)

N **COMMUNICATE** (page 31) ⚡

EXPANSION Have students work in small groups and write down as many compound nouns related to technology as they can. Examples: *software, hardware, username, password, cellphone, headphones, earbuds, laptop, desktop, toolbar, upload, backup, database,*

podcast. Have them practice the pronunciation of the new compound words, noting any exceptions to the rule from the Pronunciation Skill box.

For more practice, go to MyELT.

PART 2 TED TALKS

Go ahead, make up new words

ERIN MCKEAN'S idea worth spreading is that making up new words will help us use language to express what we mean and will create new ways for us to understand one another.

BEFORE YOU WATCH



Time: 35–45 min

A COMMUNICATE



Have students react to the quote in the image:

- Why does Erin McKean say that it's *your job* to decide what a word is? Do you agree? Why or why not?

EXPANSION If possible, bring in paper dictionaries. Give students a chance to look through them and compare paper with online dictionaries. Ask students which of the two they prefer and why.

B THINK CRITICALLY Predict.

(page 33)

VOCABULARY

C 1.16

(pages 33–34) Audio: 2:06 min

D COMMUNICATE



For more practice, go to MyELT.

WATCH



Time: 40–50 min

E 1.9 WATCH FOR MAIN IDEAS

(page 35) Video: 6:36 min

F 1.10 WATCH FOR DETAILS

(page 35)

Video: 2:44 min

G 1.11 WATCH FOR DETAILS

(page 36) Video: 3:44 min

Have students compare answers in pairs and then summarize the speaker's message in each segment in their own words.

H LISTEN FOR EXPLANATIONS OF WORDS AND TERMS

(page 36) Video: 2:32 min

Before watching the segments from the TED Talk, have students review the types of explanations of words and terms in the Listening Skill box, and indicate which ones they remember hearing McKean use.

I EXPLAIN WORDS AND TERMS

(page 37)

Have students identify and correctly pronounce the two compound nouns in the box. (*cam-corder, thunder-storm*) Encourage students to use all four techniques in the Speaking Skill box as they explain the meanings of the words and terms.

21C SKILL Work Collaboratively. Have students work in small groups to create English dictionaries of eight words, two from each category: borrowed, compounded, blended, and functional shift words. When finished, each group shares their dictionary with one other group and explains the words and terms using the techniques in the Speaking Skill box.

J 1.13 EXPAND YOUR VOCABULARY

(page 37) Video: 2:47 min

Check understanding of the vocabulary words:

- What are some examples of *laws of nature?* (*every number has a double, copper conducts electricity*)
- After studying all night for a big exam, how do you decide when to *give it a rest*?
- What motivated you to *go ahead* and learn English?
- Do you think vegetarians live longer as *opposed to* those who eat meat? Why or why not?
- What part of the English language still *makes no sense* to you?

K WATCH MORE

(page 37)

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 15–20 min

L THINK CRITICALLY Interpret an Infographic.

(pages 38–39)

Check understanding of the infographic:

- What does the infographic show? (*the process for how a new word gets added to a traditional dictionary*)
- How many steps are in the process? (4)
- What do the orange balls represent? (*new words that appear and are noticed*)
- What do the red balls represent? (*words that did not meet requirements*)
- What do the green balls represent? (*words that did meet requirements*)

M THINK CRITICALLY Infer.



PUT IT TOGETHER



Time: 10–15 min

A THINK CRITICALLY Synthesize.



21C SKILL Reflect. Have students write their own answers to the questions in a journal. They should support their opinion by referring to the podcast, TED Talk, or their own experience. Ask volunteers to share their reflections with the class.

COMMUNICATE



Time: 40–50 min + presentations

ASSIGNMENT Give a Pair Presentation on new words. (page 40)

ALTERNATE ASSIGNMENT Students can present individually. Alternative topic: present four to six words recently added to a reputable English dictionary. Students will need to conduct research and have the words approved to be sure they use at least two of the techniques for making up new words that McKean teaches.

PREPARE

PRESENTATION SKILL Encourage Audience Participation (page 40)

B COLLABORATE

(page 40)

C (page 41)

D (page 41)

PRESENT

E (page 41)

F THINK CRITICALLY Evaluate.

(page 41)

REFLECT

REFLECT BOX (page 41) Have students review vocabulary definitions. Split the class into three or four teams. Put four desks in the front of the room facing the front board, and ask each team to stand in one straight line behind the desk. (If your classroom has only tables and chairs, move a table with four chairs to the front.) On each desk, put 20 blank pieces of paper and a pencil or a small reusable white board and a whiteboard marker. Also place one student book open to page 41 on each desk for quick reference. For each round, the team member in the front of each line sits at a desk. As you project one vocabulary word definition on the board, students write down the vocabulary word that best matches the definition. Other team members cannot help or their team is disqualified from that round. The first student to hold up the piece of paper or whiteboard with the correct vocabulary word gets the point. After each round, the students sitting at the desks get up and move to the back of the lines. The next student in line from each group sits at a desk. With large classes, it is recommended to have a student helper judge which team holds the correct word up first. Keep score, and the team with the most points wins the challenge. This activity can also be modified to review synonyms, parts of speech, and word forms.

For more practice, go to MyELT.

ANSWER KEY Unit 2

THINK AND DISCUSS (page 23)

1. Answers will vary. (E.g., I express myself more easily in writing because I have time to think first.)
2. Answers will vary. (E.g., There are ways other than speaking and writing to express yourself, such as through art.)

PART 1

Emoji and Emoticons: ☺ or ☹ ?

A COMMUNICATE (page 24)

Answers will vary.

B THINK CRITICALLY Predict. (page 24)

Answers will vary. (E.g., the advantages and disadvantages of using emoji and emoticons)

C VOCABULARY (page 25)

1. reductions
2. get across
3. ancestors
4. gestures
5. compound
6. complex
7. universal
8. facial expressions
9. symbols
10. spread

D COMMUNICATE (page 26)

Answers will vary.

E LISTEN FOR MAIN IDEAS (page 27)

2 and 4

F (page 27)

Answers will vary.

G LISTEN FOR DETAILS (page 27)

- a. 4 b. 1 c. 3 d. 6 e. 5 f. 2

H (page 28)

Segment 1

1. Simple pictures
2. Punctuation or other non-letter symbols
3. A combination of two words to make one word
4. Basketball/sunlight
5. Picture
6. Character

Segment 2

7. Facial expressions and gestures

Segment 3

8. Abbreviations
9. u for you

I (page 29)

1. Answers will vary. (E.g., we're losing ably to commun cmplx ideas = step back)
2. Answers will vary. (E.g., emoji + emot imprv Ing = step frwrd)

J THINK CRITICALLY Compare. (page 30)

Answers will vary.

K COLABORATE (page 30)

1. Answers will vary. (E.g., Do you want to see a horror movie at 8?)
2. Answers will vary. (E.g., I'm nervous about the math exam.)
3. Answers will vary. (E.g., Do you want to get some pizza after class?)
4. Answers will vary. (E.g., I'm going to Canada with my family this summer.)
5. Answers will vary. (E.g., Today is my grandmother's 70th birthday.)
6. Answers will vary. (E.g., I can't play soccer because I hurt my foot.)

L (page 30)

See answers to exercise K.

M (page 31)

See the Pronunciation Skill box.

N COMMUNICATE (page 31)

1. Answers will vary. (E.g., A compound word is formed from two words to make a new word, such as *basketball*, *heartbroken*, and *earrings*.)
2. Answers will vary. (E.g., *Watermelon* is formed from two words: *water* and *melon*. A watermelon is a melon that is green on the outside and red on the inside. It has a lot of water in it.)
3. Answers will vary. (E.g., The purpose of a doghouse is to give dogs a place to live outside and to get away from bad weather.)
4. Answers will vary. (E.g., *Honeybee* is a combination of two words: *honey* and *bee*. A honeybee is a type of bee that makes honey.)

PART 2 TED TALKS

Go ahead, make up new words

A COMMUNICATE (page 32)

1. Make up a new word means to invent a new word. Answers to the second question will vary. 2. Someone who writes dictionaries. 3. Answers will vary. (E.g., In English, new words are invented constantly, probably because it has become such a widely used language all over the world. New words are created by a wide variety of people for many different reasons. Scientists invent new words for things that they discover; people who engage in sports and hobbies invent new words to describe various aspects of them; people invent words to describe new technological concepts and objects that did not exist before; people adopt words or versions of words from other languages into their own as they interact with people who have different cultures and languages; teenagers invent new expressions, called slang, probably to differentiate their language from that of their parents; people who use texting and other new modes of communication invent new words to fit the type of communication.) 4. Answers will vary. (E.g., An example of a new word in English is *choss*. It means “rock that is not good for climbing because it falls apart easily.” It probably appeared in English because rock climbing has become more popular as a sport over the past 10 years or so.)

B THINK CRITICALLY Predict. (page 33)

Answers will vary.

C VOCABULARY (pages 33–34)

1. c 2. b 3. b 4. c 5. c 6. b 7. a
8. a 9. a 10. a

D COMMUNICATE (page 35)

Answers will vary.

E WATCH FOR MAIN IDEAS (page 35)

4

F WATCH FOR DETAILS (page 35)

Segment 1

1. a 2. b 3. b 4. c 5. b 6. c

G WATCH FOR DETAILS (page 36)

Segment 2

1. T 2. F

Segment 3

3. T 4. F 5. T 6. F

H LISTEN FOR EXPLANATIONS OF WORDS AND TERMS (page 36)

Segment 1: c

Segment 2: a

Segment 3: b, d, e

Segment 4: d, e

I EXPLAIN WORDS AND TERMS (page 37)

1. Boutique (borrowed from French; means “a small, usually fashionable, store”)
2. Thunderstorm (combined the words *thunder* and *storm*) 3. Camcorder (combined *cam* from *camera* and *corder* from *recorder*)
4. To flame (The noun *flame*, which means “a fire or blaze,” became a verb, which means “to attack someone by sending an electronic message on the Internet.”) 5. LOL (combined the first letters of the words *laughing out loud*)

J EXPAND YOUR VOCABULARY (page 37)

1. c 2. b 3. a 4. c 5. a

L THINK CRITICALLY Interpret an Infographic. (pages 38–39)

1. Lexicographers, computers, dictionary users 2. Used in a wide variety of publications; used for a significant period of time; used by several different writers. Answers to the next part of the question will vary. (E.g., The editors want to make sure that the word has really entered the language and that it is not just temporary and will disappear from use very quickly. Also, they want to make sure it is not something that just one writer has created and only he or she uses as a part of his or her style, as opposed to a widely used word.)
3. Dictionary editors 4. A definition is written for the new word.

M THINK CRITICALLY Infer. (page 39)

1. Answers will vary. (E.g., lexicographers because they are word experts, and it's a part of their job to research new words) 2. Answers will vary. (E.g., It probably took years before having the help of computers. Today, because of computers, it is probably much faster; it might take only months.) 3. Answers will vary. (E.g., McKean's process relies more heavily on ordinary people to submit entries. Her rules for entering words into the dictionary are probably less strict than those used by traditional dictionary writers because of her attitude toward language; she encourages people to make up new words rather than wait for others to do so. Also, she says in her talk that listeners should make up new words and submit them to Wordnik and she will put them in the dictionary. That implies that the process is very quick and easy.) 4. Answers will vary. (E.g., because she wanted to encourage the creation and spreading of new words)

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 40)

1. Answers will vary. 2. Answers will vary. (E.g., She would think they're like "word-eating locusts" because they are replacing words in communication. She would think they're like "honeybees" because more and more people are using them, and so they are becoming more accepted and understood.)

B COLLABORATE (page 40)

Answers will vary.

C—REFLECT (page 41)

Answers will vary.

UNIT 3 To the Rescue!

PART 1

Animal Heroes

Listening

Ask Questions While Listening

Speaking

Give Reasons

Pronunciation

Syllable Stress

PART 2

TED TALKS

Robin Murphy

These robots come to the rescue after a disaster

Note Taking

Include Only Essential Details

PUT IT TOGETHER

Communicate

Participate in a Group Role Play

Presentation Skill

Use Body Language Effectively

UNIT THEME

Unit 3 explores how animals and robots quickly come to the rescue during everyday struggles and times of disaster to save human lives.

ACADEMIC TRACK

Innovation & Engineering

UNIT OPENER

Time: 5–10 min

Ask guiding questions, such as:

- Who do you see? (*firefighters, a train passenger*)
- Have you ever been in a situation like this?

THINK AND DISCUSS (page 43)

Possible answers:

1. *The train derailed and people were stuck. Firefighters are rescuing the passengers.*
2. *It's going to be about different ways to rescue people.*

PART 1

Animal Heroes Slideshow available.

The listening is a lecture on how the unique and impressive characteristics of dogs, rats, and ravens, together with innovative technology and research, can help save human lives.

BEFORE YOU LISTEN

Time: 35–45 min

A COMMUNICATE (page 44)

Check understanding of *hero* and *heroic*:

- Who are famous *heroes*? What did they do?
- What professions do you consider *heroic*?

B THINK CRITICALLY Predict. (page 44)

VOCABULARY

C 1.17 (page 45) Audio: 1:45 min

D COMMUNICATE (page 46)

For more practice, go to MyELT.

LISTEN

Time: 30–40 min

E 1.18 1.14 LISTEN FOR MAIN IDEAS

(page 46) Audio: 4:47 min Video: 4:39 min

WORDS IN THE LECTURE

Check understanding of the words:

- What everyday tools use *geospatial* information? (*cellphones, navigation devices*)
- Who works at a *hospice*? (*nurses and doctors*)
- How would you describe a *monastery*? (*religious, quiet, communal*)
- How would you describe a *monk*? (*religious, sacrificing, dedicated*)

F 1.18 LISTEN FOR DETAILS (page 47)

Audio: 4:47 min 

Have pairs of students compare answers and recall specific examples from the listening for each piece of information. Invite volunteers to share answers and examples with the class.

LISTENING SKILL 1.19 Ask Questions

While Listening (page 48) Audio: 0:21 min

Encourage students to write their questions in their notes as they listen so they don't forget. If a question wasn't answered during the talk, students can follow up with the instructor during or after class.

G 1.20 (page 48) Audio: 4:27 min

There are built-in pauses after each segment, but you may want to pause the audio to provide more time for your students to write their questions.

H 1.21 (page 49) Audio: 2:07 min

I COMMUNICATE (page 49)

AFTER YOU LISTEN Time: 15–20 min

J COLLABORATE (page 49)

For more practice, go to MyELT.

SPEAKING Time: 40–50 min

SPEAKING SKILL 1.22 Give Reasons

(page 49) Audio: 0:27 min

Elicit additional examples from the class of words or phrases to give reasons. (*since, for this reason, therefore*)

For practice with modals of ability, go to MyELT.

K 1.23 COMMUNICATE (page 50)

Audio: 1:23 min 

L THINK CRITICALLY Support Ideas. (page 50)

PRONUNCIATION SKILL 1.24 Syllable

Stress (page 50) Audio: 0:18 min

Give students some general syllable stress rules to follow. For example, in most two-syllable nouns and adjectives stress is usually on the first syllable (**ro-bot**, **tra-gic**), but in most two-syllable verbs it's usually on the second syllable (**re-spond**, **e-scape**).

M 1.25 (page 50) Audio: 0:34 min

N COLLABORATE (page 50)

EXPANSION Divide the class into equally numbered groups. Each group creates an oral account of a recent natural disaster or other emergency that was in the news, using as many of the vocabulary words from C on page 45 as possible. Then recombine the groups so that each new group consists of one member of each of the original groups. In their new groups, students take turns telling their accounts of the natural disasters or emergencies, stressing the correct syllables in the vocabulary words. They should keep notes on how many vocabulary words each person uses. Have the students return to their original groups to compare notes to determine which student(s) in the class used the most vocabulary words.

O THINK CRITICALLY Infer. (page 51)

P THINK CRITICALLY Personalize. (page 51)

For more practice, go to MyELT.

PART 2 TED TALKS

These robots come to the rescue after a disaster

ROBIN MURPHY'S idea worth spreading is that robots can help us reduce the initial response time after a disaster, which will save lives and speed the community's recovery.

BEFORE YOU WATCH

Time: 35–45 min

A THINK CRITICALLY Predict.

Have pairs of students read the quote in the image aloud and brainstorm different kinds of robots. (*industrial, domestic, medical, military*)

B COMMUNICATE

Have students practice pronunciation by underlining the stressed syllable in each word and saying them aloud in pairs.

C THINK CRITICALLY Predict.

To help students understand how a UAV, UMV, or UGV might be useful in the different disasters in exercise B, have them brainstorm the significance of being *unmanned*. Ask: How might being unmanned affect the size of these robots, where they can go, and what they can do?

21C SKILL Reflect. Have students work in small groups to share their own experience with natural disasters. Allow students to only listen, rather than share, if they aren't comfortable with the topic. Write the following prompts on the board: What happened? Where were you when it happened? How were you and your loved ones affected? How was your community affected? What types of aid were provided?

VOCABULARY

D Listen

E COMMUNICATE

For more practice, go to MyELT.

WATCH

Time: 50–60 min

F Watch for Main Ideas

(page 55) Video: 8:35 min

NOTE-TAKING SKILL Include Only Essential Details

(page 56)

Have students work in small groups to brainstorm examples of symbols and abbreviations helpful to use with each of the categories listed in the skill box. For example:

- numbers and statistics: # (number), < (less than), > (more than), yrs (years)
- definitions of key vocabulary words: = (is) i.e. (that is)
- one example of something you find difficult to understand: EX or e.g. (for example)
- the reasons for something: b/c (because)
- explanations of how things work: ↔ or = (the same as), ~ (similar to)
- the steps in a process: 1, 2, 3 (first, second, third)

G Watch

(page 56) Video: 3:16 min

H Communicate

I Communicate

J Watch for Details

Video: 7:28 min

K Give Reasons

Encourage students to use a variety of expressions to give reasons why the robots are necessary.

L Expand Your Vocabulary

(page 57) Video: 3:26 min

Check understanding of the vocabulary:

- What different ingredients do you need to *pull together* to cook your favorite dish?
- What should you do to ensure you don't *put* your studies *at risk*?
- What are *the odds* that you'll already know somebody when you move abroad?
- How can friends *sort out* a misunderstanding?
- What natural or man-made disasters are capable of *wiping out* whole communities?

- What things have been *game changers* in the field of technology? In education?
- What do you *happen to have* right now that you could use in an emergency? How could it help you?

M WATCH MORE (page 57)

For more practice, go to MyELT.

AFTER YOU WATCH Time: 10–20 min

N THINK CRITICALLY Analyze. (page 57)

PUT IT TOGETHER Time: 15–25 min

A THINK CRITICALLY Synthesize. (page 58)

B THINK CRITICALLY Apply. (page 58)

21C SKILL Reason Effectively. Ask students to discuss in small groups if they would rather depend on an animal or a robot in an emergency situation. Remind them to give reasons to support their choice. Have volunteers share opinions with the class.

COMMUNICATE Time: 40–50 min + presentations

ASSIGNMENT Participate in a Group

Role Play about robot designs. (page 59)

ALTERNATE ASSIGNMENT Instead of having students play the role of individual investors, have them work in their same groups to also decide which group's robots to invest in.

PREPARE

PRESENTATION SKILL 1.19 Use Body

Language Effectively (page 59) Video: 0:35 min

Have groups of students brainstorm appropriate facial expressions, gestures, and behaviors that send clear nonverbal messages. Have volunteers act out their group's ideas.

C 1.20 (page 59) Video: 0:35 min

D COMMUNICATE (page 59)

E COLLABORATE (page 60)

PRESENT

F (page 61)

G (page 61)

21C SKILL Work Collaboratively. If students are working as a group to decide which robots to invest in, assign roles for effective and efficient group work: the *investigator* asks the robot designers questions, the *recorder* takes notes on the group's decision, and the *lead investor* explains the group's reasons for their choice to the class. These roles can be filled by multiple students for larger groups. After each presentation, give students some time to discuss any questions they have with their group first. If students cannot answer a question within their group, have the investigator ask the question to the robot designers. Finally, have the lead investigator deliver the group's decision to the class using the recorders notes for reference.

H THINK CRITICALLY Evaluate. (page 61)

To practice fluency, have groups present their investment pitch in front of other classes. Afterwards, have the students compare which robot designs were popular in their class and the other classes, and discuss reasons for any differences.

REFLECT

REFLECT BOX (page 61) Have pairs of students work together to write a sentence with each vocabulary word. Remind them that their sentences should have enough detail to clearly illustrate the vocabulary word's meaning. When finished, have the pair rewrite their sentences, leaving a blank in place of the vocabulary word. Have each pair exchange sentences with another pair and complete the fill-in-the-blank activity.

For more practice, go to MyELT.

ANSWER KEY Unit 3

THINK AND DISCUSS (page 43)

- Answers will vary. (E.g., The train derailed and people were stuck. Firefighters are rescuing the passengers.)
- Answers will vary. (E.g., It's going to be about different ways to rescue people.)

PART 1

Animal Heroes

A COMMUNICATE (page 44)

- Answers will vary. (E.g., A dog trained in avalanche rescue is finding survivors.)
- Answers will vary. (E.g., Animals as heroes: some animals, such as the dog in the picture, can be trained to find people after natural disasters.)

B THINK CRITICALLY Predict. (page 44)

- Answers will vary. (E.g., *Search and rescue* means to find and save someone who is in danger. Search and rescue missions are necessary when people get lost in a forest or on a mountain, when a natural disaster occurs, during war, etc.)
- Answers will vary. (E.g., Animals help humans in a variety of ways. For example, dogs help find people using their excellent sense of smell.)
- Answers will vary. (E.g., dogs)

C VOCABULARY (page 45)

- devastated
- underestimate
- innovative
- survivors
- sensors
- access
- activate
- responders
- site
- wilderness

D COMMUNICATE (page 46)

Answers will vary.

E LISTEN FOR MAIN IDEAS (page 46)

1, 3, 5, and 8

F LISTEN FOR DETAILS (page 47)

	DOGS	RATS	RAVENS
1. used for hundreds of years	✓		
2. rescue people who are buried	✓		
3. find people	✓		✓
4. find landmines		✓	
5. are trainable	✓	✓	✓
6. have an excellent sense of smell	✓	✓	
7. have excellent eyesight			✓
8. form relationships with people			✓
9. are faster than people		✓	✓
10. use technology	✓		

Note: For #8, although the speaker refers to dogs as “man’s best friend,” the fact that dogs form close relationships with people is implied, not directly stated.

G (page 48)

Segment 1: Answers will vary. (E.g., Who used dogs for search and rescue in the 17th century? How did the dogs help rescue people?)

Segment 2: Answers will vary. (E.g., What other skill did the dogs have?)

Segment 3: Answers will vary. (E.g., What kind of technology are they using? How is technology making them more effective?)

H (page 49)

Answers will vary.

I COMMUNICATE (page 49)

Answers will vary.

J COLLABORATE (page 49)

Answers will vary. Possible answers:

CONTEXT	HOW DO DOGS HELP PEOPLE?
on farms	Sheep dogs gather sheep together, find lost sheep, and prevent sheep from getting lost. They also warn farmers (by barking) of strangers or animals approaching. For example, sheep dogs will bark if a fox is trying to get into the hen house. They serve as guard dogs for families that live in isolated areas.
with the police	Trained dogs can sniff out illegal drugs, explosives, food, etc. at airports; help capture suspects; protect police officers from violent suspects; help guard suspects; help find people who are lost.
with people who are disabled	Trained dogs can guide the blind; serve as the “ears” for the deaf, e.g. by touching a deaf person with their nose or paw when the doorbell rings; serve as companions and calm people down who have mental disorders.
in hospitals	They can visit sick people to raise their spirits.
in the military	Trained dogs can sniff out bombs; track and find enemy fighters through sense of smell; protect troops.
other	Puppies can visit college campuses during exam week to help students de-stress.

K COMMUNICATE (page 50)

Segment 1

- Because it is very difficult to remove all of the land mines after a war is over. (Some remain and will explode if someone steps on them.)

Segment 2

- Because rats do not weigh enough to set off the mines. (They are lighter than humans, so if they step on a landmine it will not go off; humans are heavier, and if they accidentally step on a landmine when searching for them, it will probably explode and kill them.)

Segment 3

- Because birds’ brains are very small, people assumed that they were not very smart.

L THINK CRITICALLY Support Ideas. (page 50)

Answers will vary.

M (page 50)

- ac-cess
- ac-ti-vate
- av-a-lanche
- de-va-stat-ed
- dis-pro-ven
- sen-sor
- sur-vi-vor
- wild-er-ness

N COLLABORATE (page 50)

Answers will vary.

O THINK CRITICALLY Infer. (page 51)

- Answers will vary. (E.g., An assistance dog is a dog who is trained to help people who have some sort of disability or special condition.)
- Answers will vary. (E.g., 1. Reading Assistance Dog: helps children feel more comfortable reading by just listening and not judging. In the illustration, the child is reading while the dog listens. 2. Hearing Assistance Dog: alerts deaf people to important sounds such as fire alarms. In the illustration, the dog is alerting the man to the doorbell ringing. 3. Guide Dog: guide people who are blind. In the illustration, the dog is guiding a woman as she walks outside. 4. Diabetes Assistance Dog: smells the breath of children with diabetes while the children sleep to detect if the glucose (sugar) level in the blood rises too high or falls too low, and then alerts an adult in the house. In the illustration, the dog is sitting at attention next to the bed of the sleeping child. 5. Mobility Assistance Dog: helps people who are in wheelchairs to pick up things they drop or to hand things to others. In the illustration, the dog is paying for something for the man in the wheelchair.)

P THINK CRITICALLY Personalize. (page 51)

Answers will vary.

PART 2 TED TALKS

These robots come to the rescue after a disaster

A THINK CRITICALLY Predict. (page 52)

Answers will vary.

B COMMUNICATE (page 53)

Answers will vary.

C THINK CRITICALLY Predict. (page 53)

1. Answers will vary. (E.g., Disasters with the most international media attention: 2005 Hurricane Katrina in the United States; 2010 earthquake in Haiti; 2011 earthquake and tsunami in Japan; 2011 Fukushima Daiichi nuclear disaster in Japan; 2015 Mt. Everest avalanche, etc.)
2. Answers will vary. (E.g., A UAV could fly over a nuclear disaster area to monitor it; a UMV could search for survivors in floodwater; a UGV could assess the damage to an area hit by an earthquake or a mudslide.)

D VOCABULARY (pages 53–54)

1. b 2. a 3. b 4. a 5. b 6. c
7. a 8. b 9. a 10. a

E COMMUNICATE (page 55)

Answers will vary.

F WATCH FOR MAIN IDEAS (page 55)

1 and 2

G (page 56)

Answers will vary. Possible answers:

Segment 1

Main Point: Disasters have a huge impact on the world.

more than 1M ppl killed/yr

2.5M disabled/displaced

community takes 20–30 yrs to recover

Segment 2

Main Point: Why reducing response time is so important in a disaster.

reduce 1st response time by 1 day, reduce recovery time by 1000 days (3 yrs)

insur. co. – if homeowners' claims processed 1 day earlier, home rebuilt 6 months faster

H (page 56)

Answers will vary.

I COMMUNICATE (page 56)

Answers will vary.

J WATCH FOR DETAILS (page 57)

1. Hummingbird: a, b, e, h, k
2. Fixed Wing/Hawk: a, b, f, h, k
3. Sarbot Dolphin: a, c, g, h, i
4. Bujold: a, d, h, j

K GIVE REASONS (page 57)

Answers will vary.

L EXPAND YOUR VOCABULARY (page 57)

1. c 2. c 3. a 4. a 5. b 6. a 7. a

N THINK CRITICALLY Analyze. (page 57)

1. Answers will vary. (E.g., Some people worry that robots will take away humans' jobs. Other people worry that robots will become smarter than humans and take over the world, perhaps getting rid of human beings. Murphy would reassure people by explaining that robots are not taking away humans' jobs; rather, they are doing things that humans aren't able to do because they (or the machines they'd need to do the job, e.g. an airplane or a helicopter) are too big or because the job is too dangerous. She might have a harder time reassuring those who think robots will become more intelligent than humans and then take over the world. She might argue that human (and animal) intelligence is very different from "machine intelligence" and that robots will never be able to do many of the things that humans do easily, such as feel emotions and form relationships with other humans.)

2. Answers will vary. (E.g., She means that it is not the robots themselves that are actually rescuing people or helping in recovery after disasters; in fact, it is the data that the robots provide that give humans the information they need to do the actual rescue and recovery.)

PUT IT TOGETHER

A THINK CRITICALLY **Synthesize.** (page 58)

CAPABILITIES	ANIMALS	ROBOTS
1. find missing people	✓	
2. find people who are buried	✓	✓
3. prevent disasters	✓	
4. can be controlled remotely (from a distance)		✓
5. save money	✓	✓
6. give us a lot of data	✓	✓
7. form relationships with people	✓	
8. have excellent visual abilities	✓	✓
9. have an excellent sense of smell	✓	

B THINK CRITICALLY **Apply.** (page 58)

Answers will vary.

C (page 59)

The problem becomes: who gets what data when? One thing to do is to ship all the information to everybody and let them sort it out. Well, the problem with that is it overwhelms the networks, and worse yet, it overwhelms the cognitive abilities of each of the people trying to get that one nugget of information they need to make the decision that's going to make the difference.

D COMMUNICATE (page 59)

Answers will vary.

E COLLABORATE – REFLECT (pages 60–61)

Answers will vary.

UNIT 4 Beyond Limits

PART 1

Different Brains, Different Ways of Learning

Listening

Recognize Repetition of Key Points

Speaking

Explain a Sequence of Events

Pronunciation

Pronouncing -ed Endings

PART 2

TED TALKS

Phil Hansen

Embrace the shake

Note Taking

Write Key Words and Phrases

PUT IT TOGETHER

Communicate

Give an Individual Presentation

Presentation Skill

Use Repetition and Rephrasing

UNIT THEME

Unit 4 explores how extraordinary people turn so-called limitations into boundless opportunity and make significant contributions to society.

ACADEMIC TRACK

Visual Arts

UNIT OPENER

⌚ Time: 5–10 min

Ask guiding questions, such as:

- What is this a picture of? (*a young boy in a room with some electronic equipment*)
- How would you describe the space? (*a simple room, minimalistic, poor*)

THINK AND DISCUSS (page 63)

Possible answers:

1. *The title is about breaking barriers to reach your goals.*
2. *Kelvin Doe exceeded the limits of his situation by creating a successful radio station despite starting with only spare electronic parts that he found in the trash.*

PART 1

Different Brains, Different Ways of Learning

The listening is a radio interview with a graduate student who researches people with unusual brains. She discusses how Dr. Temple Grandin became successful despite her so-called learning limitations.

BEFORE YOU LISTEN

⌚ Time: 35–45 min

A COMMUNICATE (page 64) 🎙

B 🎧 1.27 THINK CRITICALLY Predict.

(page 65) Audio: 0:52 min

Have pairs of students compare their predictions and give the reasons behind their guesses.

VOCABULARY

C 🎧 1.28 (pages 65–66) Audio: 2:04 min

D COMMUNICATE (page 66)

For more practice, go to MyELT.

LISTEN  Time: 15–25 min**E**  **1.29 LISTEN FOR MAIN IDEAS** (page 67)

Audio: 4:35 min

WORDS IN THE TALK

Check understanding of *abstract* and *an institution*:

- What does *abstract* art typically look like? (*It is not an exact representation of real life.*)
- Who might need to live in an institution? (*people with severe mental or physical disabilities*)

LISTENING SKILL  **1.30 Recognize Repetition of Key Points** (page 68)

Audio: 0:45 min

Ask students which technique—repetition of the same word or repetition of synonyms/synonymous phrases—they think would make it easier to understand key points. Why? What are the advantages and disadvantages of each technique for listeners?

F   **1.31 and 1.32 LISTEN FOR DETAILS**

(pages 68–69) Audio: 0:34 min and 0:39 min

In pairs, have students discuss what synonyms could be used for the repeated words in Segments 1 and 2. (*Segment 1: tough, challenging; Segment 2. mind, head*)

AFTER YOU LISTEN  Time: 15–25 min**G THINK CRITICALLY Reflect.** (page 69) 

Elicit the difference in meaning between *because of* and *in spite of*. (*Because of* expresses that something is directly affected by something else. *In spite of* expresses that something is not affected by something else, even though it could have been negatively affected. For example: *Because of a gas explosion, several homes burned down. In spite of the gas explosion, several houses were not damaged.*)

EXPANSION Have students research and share with the class an example of a person, from the past or present, who had enormous success despite being considered “different.” Ask

them to share why the person was considered different, and what achievements he or she made.

H COMMUNICATE (page 69)

For more practice, go to MyELT.

SPEAKING  Time: 40–50 min**SPEAKING SKILL**  **1.33 Explain a****Sequence of Events** (page 70) Audio: 0:31 min

For practice with past time clauses, go to MyELT.

PRONUNCIATION SKILL  **1.34 Pronouncing -ed endings** (page 70) Audio: 0:26 min

EXPANSION Have students get in pairs.

Each partner makes three columns on a blank piece of paper. Left to right, they label the columns: *[t]*, *[d]*, and *[ə]*. Partner A has three minutes to tell Partner B about last weekend’s activities. To practice fluency, Partner A must speak the whole time. As Partner A talks, Partner B listens and writes down all the verbs in the past tense and puts them in the appropriate column according to Partner A’s pronunciation of the -ed ending. After three minutes, partners switch roles. When the activity ends, partners review the past tense verbs used in both lists to make sure they are in the correct pronunciation columns.

I  **1.35** (page 71) Audio: 0:41 min**J**  **1.36** (page 71) Audio: 0:53 min **K COMMUNICATE** (page 71)

EXPANSION Give students time to write about a sequence of at least three important events from their own life. They should list the events in chronological order and use signal words and phrases. In small groups, have students use their notes to share this sequence of events. Remind them to pay attention to the pronunciation of -ed endings.

L THINK CRITICALLY Analyze. (page 72)

21C SKILL Reflect. Individually, have students consider how the figure helps them understand strengths and weaknesses of one family member or friend. They should circle the parts of the brain they believe represent that person's strongest skills. Then ask them to share this analysis with a partner.

For more practice, go to MyELT.

PART 2 TED TALKS

Embrace the shake

PHIL HANSEN'S idea worth spreading is that when we creatively embrace our limitations, we can discover new possibilities.

BEFORE YOU WATCH Time: 35–45 min

A COMMUNICATE (page 73)

Have pairs of students interpret the quote on the image. Ask them to personalize the message by answering the following questions:

- What was a time in your life when you felt limited? When you felt limitless? Was there any connection between the two?

B THINK CRITICALLY Predict. (page 74)

Remind students that a speaker may repeat the same word or another form of the same word. Ask them to identify the parts of speech for the words in exercise B. Note that two words can be two different parts of speech. (*art (n), artistic (adj), create (v), creation (n), creativity (n), limit (n/v), limitation (n), shake (n/v), destroy (v), destruction (n), image (n)*)

C COMMUNICATE (page 74)

VOCABULARY

D 1.37 (page 75) Audio: 2:30 min

E COMMUNICATE (page 76)

learnmore (page 76) Ask students if they have a similar expression in their languages. Do they think this kind of thinking can be taught in school, or only gained through experience?

EXPANSION Have students write How-To-Guides for how to think outside the box. In small groups, have them brainstorm five actions that help people look for new approaches to old ideas. Give examples and encourage students to use action verbs; for example, *Ask a child for advice*. Then have each group share their advice with the class. Each group member should speak at least once.

For more practice, go to MyELT.

WATCH Time: 40–50 min

F 1.21 WATCH FOR MAIN IDEAS (page 76)

Video: 6:37 min

G 1.21 WATCH FOR DETAILS (page 77)

Video: 6:37 min

NOTE-TAKING SKILL Write Key Words and Phrases (page 77)

Remind students that although their abbreviations should be the same for all forms of a repeated word or phrase in their own notes, they may be different than the abbreviations in other students' notes. Encourage students to write abbreviations that are most effective for quick review and recall.

H (page 77)

For further practice, have students write the abbreviations for the vocabulary words in exercise D and compare their notes in pairs.

I 1.22 WATCH AND TAKE NOTES

(pages 77–78) Video: 5:37 min 

J EXPLAIN A SEQUENCE OF EVENTS

(page 78) 

Have students write down the signal words they want to use, as well as the three different pronunciations of the -ed ending for reference as they talk with their partner.

K ► 1.23 EXPAND YOUR VOCABULARY

(page 78) Video: 2:44 min

Check students' understanding of the vocabulary:

- What store makes you want to *go nuts* and buy everything?
- How many ways can you *come up with* to cook an egg?
- What is one thing you need to *let go of*?
- What words immediately *come to mind* when you hear "live without limits"?
- What is something you do that feels like you are just *going through the motions*?

L WATCH MORE (page 78)

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 10–20 min

M COLLABORATE (page 78)

Write the best version of Hansen's idea worth spreading on a large piece of mural paper and tape it on the wall of the classroom or in the hallway of the school. Have the students visit other classes and encourage them to write down real-life examples that support the idea worth spreading.

PUT IT TOGETHER



Time: 15–20 min

A THINK CRITICALLY Synthesize. (page 79)

COMMUNICATE



Time: 40–50 min + presentations

ASSIGNMENT Give an Individual Presentation

on someone who had a limitation and overcame it or used it in order to become successful in some way. (page 79)

ALTERNATE ASSIGNMENT Have students give a partner presentation. One student talks in the beginning, the other student talks in the middle, and both of them talk in the end.

PREPARE

PRESENTATION SKILL ► 1.24 Use Repetition and Rephrasing (page 79)

Video: 0:27 min

B (page 80)

C (page 80)

Collect students' notecards after their presentation to check for use of key words, key words chosen for repetition (circled), and signal words and phrases.

D (page 81)

PRESENT

E (page 81)

F THINK CRITICALLY Evaluate. (page 81)

REFLECT BOX (page 81) Have students play the game *Memory* to review words. In groups of three, students cut 40 pieces of paper into memory cards. On 20 of the cards, they write the vocabulary words on one side. Ask them to use pencil so they can't see through the paper. Students should leave the other side blank. On the other 20 cards, they write synonyms for all the vocabulary words on one side of the paper, leaving the other side blank. To prepare the game, students turn all 40 cards face-down so each card looks exactly the same. To begin the game, one team member turns over two cards and reads each word aloud. If the words on both cards are synonyms, the student picks them both up and wins one point. When students win a point, they get another turn. If the words are not synonyms, the student turns the cards back over and leaves them in the exact same place. The next player repeats the task. The game continues until all cards have been matched. The student with the most points wins.

For more practice, go to MyELT.

ANSWER KEY Unit 4

THINK AND DISCUSS (page 63)

1. Answers will vary. (E.g., The title is about breaking barriers to reach your goals.)
2. Answers will vary. (E.g., Kelvin Doe exceeded the limits of his situation by creating a successful radio station despite starting with only spare electronic parts that he found in the trash.)

PART 1

Different Brains, Different Ways of Learning

A COMMUNICATE (page 64)

1. Answers will vary. (E.g., Temple Grandin's visual output area appears much larger in the brain scan than a typical person's. This relates to the title because it could make her a better visual learner—learning by seeing images and techniques.)
2. Answers will vary. (E.g., Challenges include making sure that children with autism get an education that will help them to realize their potential. Research on autism is revealing more and more about the potential that people with autism have to contribute to society, but public (and private) services and programs for people with autism are often not up-to-date with the latest research. Thus, families struggle to find the funding and programs that have the most hope of helping their loved ones. Children with autism sometimes have trouble caring for themselves physically, so this is also a challenge for their families. Some people with autism have special visual and spatial abilities, for example an extraordinary ability to recognize patterns in data or visual information; others have extraordinary talent in music or art; still others have extraordinary memories. These are just a few of the abilities that have been found in people with autism.)

B THINK CRITICALLY Predict. (page 65)

1. Answers will vary. The host actually interviews a graduate student who studies the brain.
2. Answers will vary. The host and the guest actually discuss research on people with unusual brains and the achievements of people with unusual brains.

C VOCABULARY (pages 65–66)

1. b
2. a
3. c
4. b
5. c
6. c
7. b
8. c
9. a
10. a

D COMMUNICATE (page 66)

Answers will vary.

E LISTEN FOR MAIN IDEAS (page 67)

1. N
2. T
3. F
4. F
5. T
6. F

F LISTEN FOR DETAILS (pages 68–69)

Segment 1

1. difficult
2. difficulty
3. difficulties

1. Repeated word: difficult/difficulty

2. Key point: how Dr. Grandin has faced many difficulties

Segment 2

1. brain
2. brain
3. handles
4. processes

1. Repeated word: brain

2. Synonyms: handles, processes

3. Key point: how Dr. Grandin's brain handles (or processes) information

G THINK CRITICALLY Reflect. (page 69)

1. Answers will vary.
2. Answers will vary. (E.g., Success *because of* differences and limitations means that the differences and limitations directly caused the success. Success *in spite of* differences and limitations means that the differences and limitations did not affect (hurt) the outcome of success.)

H COMMUNICATE (page 69)

Answers will vary.

I (page 71)

1. [t]
2. [d]
3. [d]
4. [d]
5. [t]
6. [d]
7. [ed]
8. [d]
9. [əd]
10. [t]

J (page 71)

Abbreviations will vary. (E.g., **One time** prblm in cattl facil; **when suddenly** 1 of cattl wld becm prlyzd + stp moving. Alwys same plc, but nb knew why; **It was then that** contctd Dr. G; **As soon as** Dr. G saw facil, IDed prblm—hole in roof-lght came in; **Once** hole coverd, cattl calm)

K COMMUNICATE (page 71)

Answers will vary.

L THINK CRITICALLY Analyze. (page 72)

1. The cerebellum is responsible for coordination. The frontal lobe for memory.
2. Language and touch
3. Answers will vary.
4. Answers will vary. (E.g., The occipital lobe, because her visual sense is very well developed. Possibly the temporal lobe as well, since she seems to be a good learner.)
5. Answers will vary. (E.g., The cerebellum, because a soccer player needs good balance and coordination. And the occipital lobe, because a soccer player needs good visual processing.)
6. Answers will vary. (E.g., The occipital lobe and/or temporal lobe and the cerebellum, because an artist needs to have good visual processing or hearing, and the coordination to translate sights or sounds into visual art or music.)
7. Answers will vary.

PART 2 TED TALKS

Embrace the shake

A COMMUNICATE (page 73)

Meaning 2 is used in the title. A *shake* is a tremor or vibration in your body, or a part of your body, that you can't control. The title means that Hansen accepted the shake in his hand.

B THINK CRITICALLY Predict. (page 74)

Answers will vary.

C COMMUNICATE (page 74)

1. Answers will vary. (E.g., find inspiration; continuously create new art; sell enough art to make money)
2. Answers will vary. (E.g., A *limitation* is a restriction or barrier. *Limitations* that would make it difficult for someone to be an artist would be physical disabilities (such as limited or no vision or hearing), and financial restrictions (not having enough money to buy supplies).)
3. Answers will vary.

D VOCABULARY (page 75)

1. T 2. F; Answers will vary. (E.g., *Ultimately* means “finally, in the end.”) 3. T 4. T 5. T
6. F; Answers will vary. (E.g., Some examples of art supplies are paint and brushes.) 7. T
8. F; Answers will vary. (E.g., When you display your art, you usually show it.) 9. T 10. F; Answers will vary. (E.g., When we do things collectively, we are usually working together.)

E COMMUNICATE (page 76)

Answers will vary.

F WATCH FOR MAIN IDEAS (page 76)

1. Everyone has limitations.
2. Individual limitations can be opportunities to find creative solutions.
3. Having the complete freedom to do whatever you want to do can be paralyzing.

G WATCH FOR DETAILS (page 77)

1. 5 2. 6 3. 7 4. 1 5. 4 6. 3 7. 2

H (page 77)

1. Answers will vary. (E.g., art)
2. Answers will vary. (E.g., creat)
3. Answers will vary. (E.g., lim)
4. Answers will vary. (E.g., destr)
5. Answers will vary. (E.g., img)
6. Answers will vary. (E.g., appr)

I WATCH AND TAKE NOTES (pages 77–78)

Segment 1: Hansen's Hand

1. Answers will vary. (E.g., dev shk in hnd)

2. Answers will vary. (E.g., fr “pointillism”—yrs of mking tiny dots + hlding pen too tght)

3. Answers will vary. (E.g., pain + jnt iss—lft art sch + art)

Segment 2: The First Change in Hansen’s Approach to Creating Art

4. Answers will vary. (E.g., embrcd the shk)

5. Answers will vary. (E.g., exprmt w diff ways to frag img; wrkd on lrgr scl w bggr mats)

6. Answers will vary. (E.g., pnt w ft, 3D strctr of 2x4s, 2D img w blwtrch)

Segment 3: The Second Change in Hansen’s Approach to Creating Art

7. Answers will vary. (E.g., prlyzd by choices, had to quit thnking outsd bx)

8. Answers will vary. (E.g., pnt w karate chps, Goodbye Art—img Jimi Hndrx md w mtchs)

J EXPLAIN A SEQUENCE OF EVENTS (page 78)

Answers will vary.

K EXPAND YOUR VOCABULARY (page 78)

1. a 2. a 3. b 4. a 5. b

M COLLABORATE (page 78)

Answers will vary.

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 79)

Answers will vary. (E.g., 1: They both faced a lot of difficulties in their lives, but they overcame them and became quite successful. 3: Grandin used her limitation to be productive in her career, and Hansen used his limitation to be creative and productive. 4: Grandin finds certain types of things impossible to do that most people can do, such as remembering directions, and it may not always easy for her to accept this. Hansen was so upset by his difficulties with his hand that he gave up art for several years. 6: Grandin does not see her autism as a brain disability, but rather as a brain difference. She believes that although autistic people cannot do everything that people with “normal” brains can do, those “normal” people are unable to do some very important things that autistic people can do easily. Hansen would probably agree because his “limitation” has not DISabled him. In fact, it has ENabled him to create art that he would probably never have created without his limitation.)

B—REFLECT (pages 80–81)

Answers will vary.

UNIT 5 Stress: Friend or Foe?

PART 1

How Stress Affects the Body

Listening

Listen for Cause and Effect

Speaking

Talk about Cause and Effect

Pronunciation

Thought Groups

PART 2

TED TALKS

Kelly McGonigal

How to make stress your friend

Note Taking

Use Symbols

PUT IT TOGETHER

Communicate

Conduct a Survey

Presentation Skill

Vary Your Pace

UNIT THEME

Unit 5 explores how we can control our mind-body connection to transform stressful experiences into happier and healthier ones.

ACADEMIC TRACK

Health & Psychology

UNIT OPENER

⌚ Time: 5–10 min

Ask guiding questions, such as:

- What is happening in the photo? (*Two performers are waiting backstage, and two are acting in front of an audience.*)
- How do the performers backstage feel? (*One seems calm and the other nervous.*)

THINK AND DISCUSS (page 83)

Possible answers:

1. *Foe means “enemy.” This unit might be about whether stress helps or hurts you.*
2. *Stress can be positive for performers if it gives them energy. It can be negative if it gives them stage fright.*

PART 1

How Stress Affects the Body

► Slideshow available.

The listening is a lecture about the positive and negative effects of stress on the human body. The professor discusses the science behind stress and distinguishes between acute and chronic stress.

BEFORE YOU LISTEN

⌚ Time: 30–40 min

A COMMUNICATE (page 84) 🎤

21C SKILL Analyze Different Perspectives.

Ask students to consider the effects of stress on the mammoths in the image. How could stress have helped them? How could it have hurt them?

B THINK CRITICALLY Predict. (page 84) 🎤

VOCABULARY

C ⓘ 2.2 (page 85) Audio: 1:33 min

D COMMUNICATE (page 86)

For more practice, go to MyELT.

LISTEN ⏰ Time: 20–30 min**E** ⏱ 2.3 ► 1.25 **LISTEN FOR MAIN IDEAS**

(pages 86–87) Audio: 4:49 min Video: 4:45 min

Have pairs of students read questions and answers aloud before listening. Address any confusion about words or expressions. After listening, have students recall examples of acute and chronic stress they heard and give their own real-life examples of the two.

LISTENING SKILL ⏱ 2.4 **Listen For Cause and Effect** (page 87) Audio: 0:49 min

Have students identify whether the signal word or phrase introduces a cause or an effect. (*introduces a cause: be caused by; introduces an effect: as a result, lead to, affect, effect*) Then, have them write a new example sentence for each signal word and phrase (five total) that illustrates the cause-and-effect relationship of education and career or studying and grades. Have volunteers share their sentences with the class.

F ⏱ 2.5 **LISTEN FOR DETAILS** (page 88)

Audio: 2:31 min

AFTER YOU LISTEN ⏰ Time: 15–20 min**G** **THINK CRITICALLY** **Apply.** (page 88)

EXPANSION Introduce the term *phobia* and explore the most common phobias with the class. Ask students the difference between a phobia and a fear (*phobia: extreme or irrational fear*). Then, write the following top five phobias on the board: Arachnophobia, Ophidiophobia, Acrophobia, Agoraphobia, Cynophobia. Have pairs of students guess what each phobia is without looking it up. Then review the answers as a class. (*Arachnophobia: fear of spiders. Ophidiophobia: fear of snakes. Acrophobia: fear of heights. Agoraphobia: fear of crowded or open spaces. Cynophobia: fear of dogs.*) Have volunteers share if they or somebody they know has one of these phobias.

For more practice, go to [MyELT](#).

SPEAKING ⏰ Time: 45–55 min**SPEAKING SKILL** **Talk about Cause and Effect** (page 89)

Have volunteers read the example sentences aloud as you review spelling changes, word order, and preposition changes with the class. Point out the spelling differences between *affect* and *effect*. Tell students the following trick to remember the difference: *Affect is an action*, so the verb starts with the letter **a**. Ask: What patterns do you notice with prepositions? (*The noun forms use of.*)

For practice with preposition + noun and noun + preposition, go to [MyELT](#).

H **COMMUNICATE** (page 89) 🌟**I** **COMMUNICATE** (page 89)

Have students work with a different partner than the one they worked with for H.

J **THINK CRITICALLY** **Interpret an Infographic.** (pages 90–91) 🌟

21C SKILL **Think Creatively.** Have students create an acrostic with the word *STRESS*. Each letter should represent one stress management suggestion not mentioned in the infographic. For example:

Step back from the situation and reflect.

Take five deep breaths.

Reach out to someone for support.

Explain the problem in writing.

Share your emotions with a friend.

Sing your favorite song.

Have students share their work in small groups. Ask volunteers from each group to share their favorite suggestions.

PRONUNCIATION SKILL ⏱ 2.6 **Thought Groups** (page 92) Audio: 0:22 min**K** ⏱ 2.7 (page 92) Audio: 0:37 min 🌟**L** ⏱ 2.7 (page 92) Audio: 0:37 min

EXPANSION Have students work in pairs to divide the sentences in the Speaking Skill box into thought groups with slashes. As students complete the task, write the sentences on the board. Ask volunteers to write in their slashes to all of the sentences on the board (if possible in different colors). Answers may vary, so ask students to refer to the guidelines in the skill box as they explain their work.

For more practice, go to MyELT.

PART 2 TED TALKS

How to make stress your friend

KELLY MCGONIGAL'S idea worth spreading is if we can view stress as our body's natural (and even positive!) reaction to a difficult situation, it's far better for our relationships, health, and happiness.

BEFORE YOU WATCH



Time: 30–40 min

A THINK CRITICALLY Predict. (page 93)

Have students read and react to the quote in the image. Ask guiding questions, such as:

- Do most people think stress is a negative or positive emotion? Why?
- What do you think Kelly McGonigal thought about stress before? What might she think about it now. Why do you think she changed her mind?

B THINK CRITICALLY Predict. (page 94)

VOCABULARY

C ⚡ 2.8 (pages 94–95) Audio: 1:53 min

D COMMUNICATE (page 95)



For more practice, go to MyELT.

WATCH



Time: 35–45 min

E ► 1.26 WATCH FOR MAIN IDEAS (page 96)

Video: 10:44 min

NOTE-TAKING SKILL Use Symbols (page 97)

Elicit further examples of symbols that show the relationship between ideas. Write student ideas on the board. For example:

Cause and Effect: X » Y (cause); Y « X (effect)

Similarity and Difference: ≈ (similar); ≠ (different)

Amount/Increase and Decrease: Δ (change)

F ► 1.27 WATCH FOR DETAILS (page 97)

Video: 2:42 min



G TALK ABOUT CAUSE AND EFFECT

(page 97)

Before talking with a partner, have students return to their notes in exercise F. Have them write the signal words and phrases from the Speaking Skill and Listening Skill boxes next to the places they want to use them. They may also want to write in the relationship word or phrase the note-taking symbols represent.

H ► 1.28 EXPAND YOUR VOCABULARY

(page 97) Video: 3:35 min

Check understanding of the vocabulary words:

- What animal or insect *freaks you out*?
- What advice would you give someone who wants to *fine-tune* their English skills?
- Do you tend to *bottle up* your emotions? Why or why not?
- What is something you recently *changed your mind* about? Why?
- Who in your life gives you a *nudge* when you need to finish a project?
- Who in your life do you *reach out to* when you are feeling upset or down?

I WATCH MORE (page 97)

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 25–30 min

J COMMUNICATE (page 98)

K THINK CRITICALLY Analyze. (page 98)



EXPANSION Have students share quotes and sayings from their own languages that relate to McGonigal's talk and her idea worth spreading.

Have students explain what they think the connection is.

PUT IT TOGETHER

Time: 15–20 min

A THINK CRITICALLY Synthesize. (page 99)

Before doing the exercise, have pairs of students verbally summarize the lecture and TED talk in their own words. Partner A summarizes the lecture, and Partner B summarizes the talk. Give students a couple of minutes to look through the unit and take notes on key ideas. Then, have them close their books. Keep time. Each partner has three minutes to give a verbal summary. Repeat with a different partner to practice fluency.

COMMUNICATE

Time: 40–50 min + presentations

ASSIGNMENT **Conduct a Survey** on stress and prepare a group presentation to report the results. (page 99)

ALTERNATE ASSIGNMENT Have students create their own surveys about stress in groups, pairs, or individually. The questions should be related to topics in McGonigal's TED Talk.

PREPARE

PRESENTATION SKILL  **1.29 Vary Your Pace** (page 99) Video: 0:25 min

B **1.30** (page 100) Video: 0:56 min

C (page 100)

Have students do a dramatic read of the paragraph in exercise B. Ask them to exaggerate pauses at the end of the thought groups and slow down their pace around important ideas. Have volunteers read in front of the class.

D (pages 100–101)

Review the survey questions with students and conduct a class brainstorm on verbal and nonverbal polite strategies to use when asking someone to take a survey. Be sure to discuss what to do if somebody ignores or refuses the asker. Give students time to practice with each

other in class before approaching others. Allow lower-level or shy students to conduct surveys in pairs for moral support. You may want to ask students to record their conversation or take a photo with the person being surveyed to hold students accountable. Remind them to ask for permission before recording or taking any photos.

E (page 101)

PRESENT

F (page 101)

G THINK CRITICALLY Evaluate. (page 101)

REFLECT

REFLECT BOX (page 101) Have students play charades to review word meaning and usage. In groups of six, ask students to write down the 20 vocabulary words on a piece of paper and then cut out the words. Have them put the 20 pieces of paper in a small bag. Then, have each group split into two teams. Team A and Team B should each have three students. Explain charades: Team A begins. One team member chooses a word from the bag and acts it out for the other team members to guess, using only movements and sounds, but no words. Team A gets only three chances to guess the word aloud before their round ends. If Team A doesn't guess correctly, the word goes back in the bag. Teams switch and repeat the activity. Model charades with a higher-level volunteer in front of the class. Ask the volunteer to open his or her book to page 101 to reference the Reflect box as you act. Pick a piece of paper out of a bag, read the word silently without showing anyone, fold the paper, and set it aside (not back in the bag). Act out the vocabulary word until the volunteer guesses the correct word. Then, switch roles and have the volunteer act out a new word while you guess. Remind students that team members should switch roles each round so everyone participates. Play until each group has guessed all 20 words. For smaller classes, divide into two or three groups and play as a whole class.

For more practice, go to MyELT.

ANSWER KEY Unit 5

THINK AND DISCUSS (page 83)

1. Answers will vary. (E.g., *Foe* means “enemy.” This unit might be about whether stress helps or hurts you.)
2. Answers will vary. (E.g., Stress can be positive for performers if it gives them energy. It can be negative if it gives them stage fright.)

PART 1

How Stress Affects the Body

A COMMUNICATE (page 84)

Answers will vary.

B THINK CRITICALLY Predict. (page 84)

1. Answers will vary.
2. Answers will vary. (E.g., The lecturer describes “fight or flight” in this way: “[I]magine you’re walking home when a big scary dog jumps out at you. What happens? You are suddenly full of energy, ready to run away or fight. This is called the ‘fight or flight’ reaction.”)
3. Answers will vary. (E.g., Effects of stress on the heart are high blood pressure and thicker heart muscles, which can lead to an increased risk of heart disease.)

C VOCABULARY (page 85)

1. mechanism
2. inevitably
3. be associated with
4. releases
5. strengthens
6. revealed
7. enhance
8. crisis
9. muscles
10. chronic

D COMMUNICATE (page 86)

Answers will vary.

E LISTEN FOR MAIN IDEAS (pages 86–87)

1. c
2. b
3. a
4. b
5. b

F LISTEN FOR DETAILS (page 88)

Segment 1

1. heart
2. blood
3. rate
4. brain
5. muscles
6. fast/faster

Segment 2

7. releasing
8. stress
9. high
10. relax
11. kill

G THINK CRITICALLY Apply. (page 88)

1. Answers will vary. (E.g., P: getting bad grades; falling from a great height (if unlikely to happen in everyday life); giving a speech/speaking in front of an audience; the dark; spiders (if poisonous spiders are not present); snakes (if poisonous snakes are not present); losing your cell phone; someone breaking into your apartment (if not in a high-crime area). D: falling from a great height (if likely to happen because of job, etc.); spiders (if poisonous spiders present); getting into a car accident; snakes (if poisonous snakes present); someone breaking into your apartment (if live in a high-crime area))
2. Answers will vary.
3. Answers will vary.

H COMMUNICATE (page 89)

1. Answers will vary. (E.g., What causes chronic stress? Psychological fear or worry about the future that last a long time)
2. Answers will vary. (E.g., What are results of too much stress? Thick heart muscles and high blood pressure that can lead to heart disease)
3. Answers will vary. (E.g., What are the effects of stress on your everyday life?)

I COMMUNICATE (page 89)

Answers will vary.

J THINK CRITICALLY Interpret an Infographic. (pages 90–91)

1. Answers will vary. (E.g., It was designed for employers and their employees because it refers to work-related stress and how organizations can help their employees.)
2. Answers will vary.
3. Answers will vary.
4. Questions that should be checked with their answers in parentheses: a. What can people do to deal with stress? (go on the Internet, watch TV, sleep, read a book, listen to music, talk to others, face their problems, set realistic goals, take action, think positively and accept change, exercise regularly, do activities they enjoy) b. How can employers create a better work environment for their workers? (give

employees control and support) c. Which is more effective in dealing with stress, talking to someone or listening to music alone? (talking to someone) Answers to the other questions will vary. (E.g., A feeling of control makes someone feel less stressed out because it means they have power over their situation and there are fewer unknowns to worry about. Exercising is a better way to deal with stress than reading because it helps to get out the nervous or negative energy, and it strengthens your body to protect it against the negative effects of stress.)

5. a. (E.g., The administrative assistant (a.) would be least likely to suffer from stress because he works less than the others and probably doesn't have as many work-related stressors, such as making important decisions.)

6. Answers will vary.

7. Answers will vary.

K (page 92)

1. For example,/imagine you're walking home/ when a big scary dog jumps out at you./What happens?/
2. You are suddenly full of energy,/ready to run away or fight./This is called/the "fight or flight" reaction./
3. Where does all that energy come from?/It starts with your brain/releasing the powerful stress hormones/adrenaline and cortisol./

L (page 92)

See answers to exercise J.

PART 2 TEDTALKS

How to make stress your friend

A THINK CRITICALLY Predict. (page 93)

Answers will vary. (E.g., Different: She will probably talk about the benefits of stress, whereas the lecturer discussed mainly the harmful effects of chronic stress on the body. She might discuss more about the psychological aspects of stress than the lecturer did, as well as how to use stress to your advantage. Similarities: Like the lecturer, she might discuss the benefits of acute stress.)

B THINK CRITICALLY Predict. (page 94)

Answers will vary.

C VOCABULARY (pages 94–95)

1. a 2. a, a 3. b 4. b, b 5. a, b, c 6. b

D COMMUNICATE (page 95)

Answers will vary.

E WATCH FOR MAIN IDEAS (page 96)

1. b 2. c 3. a 4. a 5. a

F WATCH FOR DETAILS (page 97)

Segment 1: Study 1

1. ↑ 2. ↑ 3. = 4. >

Segment 2: Built-In Mechanism for Stress Resilience = Human Connection

5. → 6. → 7. →

G TALK ABOUT CAUSE AND EFFECT (page 97)

Answers will vary.

H EXPAND YOUR VOCABULARY (page 97)

1. b 2. c 3. c 4. b 5. a 6. a

J COMMUNICATE (page 98)

Answers will vary.

K THINK CRITICALLY Analyze. (page 98)

1. Answers will vary. (E.g., This quote is related to McGonigal's idea that the way you look at a situation (for example, a stressful event) affects the way the event impacts you. For example, if you look at stress as something negative, it will have a negative impact on your health. If you look at it positively, it will not affect you negatively, and might even have a positive effect on your health.)
2. Answers will vary. (E.g., This quote is related to McGonigal's argument that helping others causes our brains to release oxytocin, which has a positive effect on our overall health.)

3. Answers will vary. (E.g., McGonigal talks about a “biology of courage” when she talks about the human stress response and how it can help people to develop resilience to difficulties in life. Resilience in the face of difficulty is a component of courage, and the more you practice it, the stronger it gets.)

B (page 100)

And when you choose to view stress in this way/you're not just getting better at stress/you're actually making a pretty profound statement./ You're saying that you can trust yourself/to handle life's challenges./ And/you're remembering that/you don't have to face them alone.

C—REFLECT (pages 100–101)

PUT IT TOGETHER

A THINK CRITICALLY **Synthesize.** (page 99)

2, 3, 4, and 5

UNIT 6 Treasured Places

PART 1

A Precious Resource

Note Taking

Rewrite Your Notes in Outline Form

Listening

Recognize Linking

Speaking

Ask for and Give Clarification

Pronunciation

Intonation in Questions

PART 2

TED TALKS

Jason deCaires Taylor

An underwater art museum, teeming with life

PUT IT TOGETHER

Communicate

Participate in a Group Discussion

Presentation Skill

Be an Active Participant in a Discussion

UNIT THEME

Unit 6 explores creative ways we can minimize manmade problems to create a better future for our oceans and for ourselves.

ACADEMIC TRACK

Art & Conservation

UNIT OPENER

Time: 5–10 min

Ask guiding questions, such as:

- What is this place? (*a museum*)
- Who are the people in the image? (*tourists*)
- What is on display? (*King Tut's funerary mask*)
- What famous museums are near where you live? Have you ever visited them?

THINK AND DISCUSS (page 103)

Possible answers:

1. *Maybe. I would like to see an important part of history, but it looks really crowded.*
2. *Treasured means “valued.” The title is related to the photo because museums are treasured places that protect highly valuable historical artifacts. This unit is going to be about places we value.*

PART 1

A Precious Resource

The listening is a group discussion about coral reefs between a teaching assistant (TA) and college students. They talk about the characteristics of coral reefs and why they are critical to marine and human life.

BEFORE YOU LISTEN

Time: 30–40 min

A COMMUNICATE (page 104)

Elicit how scuba diving and snorkeling are different. (*Scuba diving involves using air tanks, while snorkeling involves a mask and an air tube.*) If appropriate, display images of each.

B THINK CRITICALLY Predict. (page 104)

Ask a student to read aloud the caption of the image. Elicit where they think coral reefs are typically found (*in tropical waters*), and ask them to share any experiences they have had with coral reefs.

VOCABULARY

C 2.9 (page 105)

Audio: 2:01 min

For practice with infinitives, go to MyELT.

D COMMUNICATE (page 106)

Ask students to explain what the message of the photo is and how it relates to the title of Part 1. As they discuss, encourage students to use new vocabulary words from exercise C.

For more practice, go to MyELT.

LISTEN Time: 40–50 min**E 2.10 LISTEN FOR MAIN IDEAS** (page 106)

Audio: 6:43 min

F 2.11 LISTEN FOR DETAILS (page 107)

Audio 5:00

Have pairs of students compare answers and expand on the supporting information with information from the listening. (*The lecture said 20 percent of reefs are dying, but also that they can't recover.*)

NOTE-TAKING SKILL **2.12 Rewrite Your Notes in Outline Form** (page 107) Audio: 1:43 min

G 2.13 LISTEN AND TAKE NOTES (page 108)

Audio: 1:53 min

H REWRITE YOUR NOTES (page 108)

Have each partner verbally summarize the segment of the discussion based on their notes and outline.

LISTENING SKILL Recognize Linking

(page 109) Audio: 0:20 min

Provide students with some general guidelines for linking. Words are often linked when one ends with a consonant sound and the next begins with a vowel sound (*happens if* becomes *happen-sif*), when one word ends with the same consonant sound the next word begins with (*special land* becomes *specia-land*), or when one word ends with a “t” or “d” sound and the next word begins with a consonant, as the “t” or “d” sound is dropped (*let me* becomes *lemme*). Emphasize that these are just a few ways to link sounds in English.

I 2.15 (page 109) Audio: 0:33 min**J 2.16** (page 109) Audio: 1:04 min**AFTER YOU LISTEN** Time: 25–35 min**K THINK CRITICALLY Analyze.** (page 109)

Have pairs of students read the sentences from exercises I and J aloud. Ask them to first read the sentences pronouncing each individual word, and then read them again with linking.

L THINK CRITICALLY Interpret an Infographic. (page 110)

EXPANSION Have students collaborate to design a pamphlet or poster that will improve public awareness of the importance of coral reefs and how we can help protect them. Have pairs of students choose one of the tips from the infographic to focus on. Ask them to include specific techniques or strategies, resources, and alternative activities in their pamphlet or poster. For example, students could give names of Web sites, books, or articles to increase education (tip 2), or they could compare sustainable and less sustainable seafood (tip 4). Encourage them to be creative and use visuals. When finished, have pairs present their pamphlet or poster to the class.

M COMMUNICATE (page 111)

EXPANSION Have students look up a calendar of local events and share any events aimed at improving the environment. Encourage students to attend and report back to the class about their experience.

For more practice, go to MyELT.

SPEAKING Time: 25–35 min

SPEAKING SKILL Ask For and Give Clarification (page 111)

PRONUNCIATION SKILL  **2.17 Intonation in Questions** (page 112) Audio: 0:23 min

Have students return to the questions for asking for and giving clarification in the Speaking Skill box. Ask them to identify what kinds of questions they are, and which intonation patterns they follow. (*They're all yes/no questions, so they all have rising intonation at the end. However, without the addition of "right?" on the end, these questions would be statement questions with rising intonation at the end: If I understand correctly, you're saying that...? You're talking about...?*)

N  **2.18** (page 112) Audio: 0:22 min

O COMMUNICATE (page 112) 

21C SKILL Communicate Effectively. Have students work with the same partner to represent the answer to one of the questions as a diagram or infographic. Encourage them to use infographics in their book as models, and show examples of process diagrams if necessary. Hand out blank pieces of paper. Remind students their visual aid should include mostly images and symbols, and display only key words. Each visual should include at least three steps (for numbers 1 and 2), consequences (for number 3), or reasons (for number 4). When students have completed their diagram or infographic, have them form a group with another pair of students to show and describe their work.

P THINK CRITICALLY Apply. (page 112) 

To close the exercise, ask the class who they believe is most responsible for coral reef preservation and why.

For more practice, go to MyELT.

PART 2 TEDTALKS

An underwater art museum, teeming with life

JASON DECAIRES TAYLOR'S idea worth spreading is that by bringing our art into the ocean we can take advantage of the stunning visual impact of the setting and also help restore marine

habitats and encourage people to see the oceans as precious places worthy of protection.

BEFORE YOU WATCH  Time: 35–45 min

A (page 113) 

B COMMUNICATE (page 114)

Ask students to respond to the image. Do they like the sculpture and its setting? Why or why not? What is the message of the piece?

C (page 114)

Ask students to share places and things that have been deemed sacred in their home countries or cultures and are protected in order to keep them safe.

D THINK CRITICALLY Predict. (page 114)

VOCABULARY

E  **2.19** (page 115) Audio: 1:50 min

F COMMUNICATE (page 116) 

For more practice, go to MyELT.

WATCH  Time: 30–40 min

G  **1.31 WATCH FOR MAIN IDEAS**

(page 116) Video: 9:59 min

WORDS IN THE TALK

Check understanding of the words in the talk:

- How is your apartment or house *configured*?
- What is typically *decimated* in a natural disaster such as a hurricane or earthquake?
- What animals reproduce by *spawning*? (*fish, frogs, birds*)
- Where can you see *veins*? Why? (*arms, legs; because the skin is thinner*)

H  **1.32 WATCH FOR DETAILS** (page 117)

Video: 4:32 min

Have students review answers in pairs and take turns verbally summarizing each segment. Encourage them to include additional details they recall from the talk.

I ► 1.33 EXPAND YOUR VOCABULARY

(page 117) Video: 3:07 min

- Check understanding of the vocabulary words:
- What skill has a *steep learning curve*? Why?
 - What is a hobby you always wanted to *take up*? Why haven't you yet?
 - What area of study have you really *plugged into*? What do you like about it?
 - Who is one person you'd like to *team up with* for future class projects? Why?
 - What movie or song *blows your mind*? Why?
 - What pets do you think would *wreak havoc* on your home? Why?

J WATCH MORE (page 117)

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 15–25 min

K THINK CRITICALLY Analyze and Reflect.

(page 118)

PUT IT TOGETHER



Time: 30–40 min

A THINK CRITICALLY Synthesize. (page 119)



21C SKILL Work Collaboratively. Have students get in groups of four. Assign roles so everyone actively participates in the discussion. The *group leader* keeps the conversation on topic. The *time keeper* keeps track of the time. The *recorder* takes notes on the discussion. Encourage this student to take notes in a compare/contrast format such as a Venn diagram or a T-chart. The *reporter* uses the recorder's notes to share the group's list with the class for question number 2. Encourage students to ask for and give clarification while sharing lists of similarities and differences with the whole class.

COMMUNICATE



Time: 30–40 min + group discussion

ASSIGNMENT Participate in a Group

Discussion about what individuals or governments are doing to protect the environment. (page 119)

PREPARE

PRESENTATION SKILL Be an Active Participant in a Discussion (page 119)

Ask students about other examples of body language that show active participation in a discussion. (*head nodding, leaning in, not looking at your watch or cell phone, good sitting or standing posture*) Also, elicit gestures for polite interruption. (*slightly raising a hand or finger*)

B (page 120)

PRESENT

C (page 121)

D (page 121)

E THINK CRITICALLY Evaluate. (page 121)

REFLECT

REFLECT BOX (page 121)

Have students review vocabulary word usage by making word associations. First, model the task on the board. Have the class give you a word and then time you for 30 seconds as you make as many associations as you can. For example, if students give you the word *art*, you write on the board: 1. *art: painting, museum, show, history, beautiful, deco, modern, craft, Monet, "Starry Night," ink*. When time is up, briefly explain your associations to the class. Then, ask students to number 1–20 on a blank piece of paper. Say each vocabulary word two times to the whole class and give students 30 seconds to write down as many word associations as they can for each. Every five words, give students 3–5 minutes to compare their lists and explain their associations in pairs.

For more practice, go to MyELT.

ANSWER KEY Unit 6

THINK AND DISCUSS (page 103)

1. Answers will vary. (E.g., Maybe. I would like to see an important part of history, but it looks really crowded.)
2. Answers will vary. (E.g., *Treasured* means "valued." The title is related to the photo because museums are treasured places that protect highly valuable historical artifacts. This unit is going to be about places we value.)

PART 1

A Precious Resource

A COMMUNICATE (page 104)

1. Answers will vary. (E.g., water, reefs)
2. Answers will vary.

B THINK CRITICALLY Predict. (page 104)

1. Answers will vary. (E.g., Coral reefs are walls of rocks in the sea formed by the skeletons of a kind of organism that lives in oceans. They are important to the health of the ocean because they protect coastlines from the damaging effects of waves and storms, and they support a diverse range of ocean organisms.)
2. Answers will vary. (E.g., Reefs today are being damaged and destroyed by some fishing practices (such as overfishing), some tourism practices (such as touching coral when snorkeling), pollution, and climate change.)
3. Answers will vary. (E.g., They benefit humans by protecting coastlines, gaining money from tourism, and providing food for people who live near them.)

C VOCABULARY (page 105)

1. cement
2. barrier
3. habitats
4. instrumental
5. species
6. fragile
7. thrive
8. precious
9. massive
10. preservation

D COMMUNICATE (page 106)

Answers will vary.

E LISTEN FOR MAIN IDEAS (page 106)

2

F LISTEN FOR DETAILS (page 107)

1. e, g
2. c, h
3. a, b, d, f, i

G LISTEN AND TAKE NOTES (page 108)

1. (coral) reefs to human life
2. Fishing
3. >500M
4. food
5. work
6. Protect
7. barrier
8. coast
9. prevent/reduce
10. Tourism
11. scuba diving
12. Scientific
13. medicines for
14. Contribute
15. 30–172B

H REWRITE YOUR NOTES (page 108)

- A. Answers will vary. (E.g., Fishing indus: >500M ppl dep on reefs for food + work)
- B. Answers will vary. (E.g., Protect shore: barrier btw ocean + Ind, protect/reduce damage during storms)
- C. Answers will vary. (E.g., Tourism indus: snorkl + scuba dv)
- D. Answers will vary. (E.g., Sci resrch: drugs, for ex cancer & HIV, devlp fr plnts + animals on reef)
- E. Answers will vary. (E.g., Contrib to wrld econ = \$30–172B/yr)

I (page 109)

1. reefs
2. so
3. to
4. ocean
5. health
6. habitats
7. lots
8. of
9. species
10. can
11. you
12. link
13. directly
14. to
15. ocean
16. health

J (page 109)

1. OK, now let's talk about what's happening to the reefs.
2. About 20 percent are badly damaged and can't recover.
3. About one half are at risk, but can be saved.

K THINK CRITICALLY Analyze. (page 109)

Answers will vary.

L THINK CRITICALLY Interpret an Infographic. (page 110)

1. Answers will vary. (E.g., a general audience, as the advice seems to cover a wide range of activities, from everyday things such as saving water to specific advice for people who own boats)

- See “Problems” column in chart below.
- See “Tips on How You Can Help” column in chart below.
- Answers will vary.

PROBLEMS	TIPS ON HOW YOU CAN HELP
1. pollution	7, 8, 9
2. overfishing	2, 4
3. global warming	3
4. ocean recreation	5, 10

M COMMUNICATE (page 111)

Answers will vary. (E.g., Other problems include climate change, water shortage, air pollution, etc.)

N (page 112)

- Information question
- Yes/No question
- Statement question

O COMMUNICATE (page 112)

- Answers will vary. (E.g., Corals are not plants. Coral polyps float through the water and attach to a hard surface. They release a chemical that cements them to each other and to the surface they are on. When a lot of polyps are cemented together, they form a reef. Have you got it?)
- Answers will vary. (E.g., The reefs provide a habitat for a wide variety of plants and animals. These plants and animals rely on the reefs for food and shelter and many would die without them. Do you see how the reefs are extremely important to the biodiversity and health of the oceans?)
- Answers will vary. (E.g., They are dying off at a rapid rate due to pollution, global warming, overfishing, and ocean recreation. Twenty percent are so badly damaged that they can't recover, and half of the remaining reefs are also at risk. Are you with me?)
- Answers will vary. (E.g., Because they are critical to several major industries: tourism, fishing, and drug research. Let me clarify. They contribute \$30–172 billion every year to the world economy through these industries, and more than 500 million people around the world rely on coral reefs for food and jobs.)

P THINK CRITICALLY Apply. (page 112)

Answers will vary.

PART 2 TED TALKS

An underwater art museum, teeming with life

A (page 113)

Answers will vary. (E.g., If something is “teeming with life,” it means that it is full of life, or that there are a lot of living things in it. *Sacred* means “worthy of great respect,” so the speaker probably thinks the oceans are valuable and we need to respect them.)

B COMMUNICATE (page 114)

- Answers will vary. (E.g., underwater, in the ocean)
- Answers will vary. (E.g., the edges would become soft, the color would change, coral might attach to it, algae might grow on it)

C (page 114)

- b
- c
- b

D THINK CRITICALLY Predict. (page 114)

Answers will vary.

E VOCABULARY (page 115)

- F; you put all of it under the water
- F; certain and does not change easily
- F; rough, not smooth
- T
- T
- T
- F more likely
- F very large; T
- T

F COMMUNICATE (page 116)

Answers will vary.

G WATCH FOR MAIN IDEAS (page 116)

- 1, 2, 4

H WATCH FOR DETAILS (page 117)

Segment 1

- a
- b

Segment 2

- c
- b

Segment 3

5. b

Segment 4

6. a

I EXPAND YOUR VOCABULARY (page 117)

1. a 2. c 3. a 4. a 5. a 6. a

K THINK CRITICALLY Analyze and Reflect.

(page 118)

1. Answers will vary. (E.g., It represents a banker. It relates to his *idea worth spreading* because it is stunning to look at, it shows a lot of fish swimming around it, and the banker's head is under the sand so it looks like he's looking for something valuable under the sand (and water).)
2. Answers will vary.
3. Answers will vary.
4. Answers will vary.

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 119)

Answers will vary. (E.g., Similarities: they educate people; they believe oceans are valuable resources; they're passionate and upbeat; they're both male. Differences: one is a teaching assistant and one is an artist; the teaching assistant talks about the problems coral reefs face, while the speaker talks about a solution to the problem; the teaching assistant seems to be very interested in many animals, while the artist is interested in sea animals.)

B—REFLECT (pages 120–121)

Answers will vary.

UNIT 7 Live and Learn

PART 1

Is the Internet Making Us Bad Readers?

Note Taking

Use a T-Chart to Take Notes

Listening

Recognize a Speaker's Tone

Speaking

Defend a Position

Pronunciation

Stress Key Words

PART 2

TED TALKS

Sugata Mitra

Build a school in the cloud

PUT IT TOGETHER

Communicate

Participate in a Panel Discussion

Presentation Skill

Show Enthusiasm for Your Topic

UNIT THEME

Unit 7 explores how schools can foster the autonomy, creativity, and collaboration students need for future success.

ACADEMIC TRACK

Education & Technology

UNIT OPENER

⌚ Time: 5–10 min

Ask guiding questions, such as:

- What is this a picture of? (*Barrington Irving and his Experience Aviation students on a plane*)
- What does Barrington Irving do? (*He's a National Geographic Explorer, pilot, and educator.*)
- How are the students feeling? (*excited, proud, happy*)

THINK AND DISCUSS (page 123)

Possible answers:

1. *They are learning how to be pilots. Yes, I'd like to be one of Barrington Irving's students because he seems like he would be inspiring.*
2. *The unit will be about how learning fits into our lives.*

PART 1

Is the Internet Making Us Bad Readers?

The listening is a roundtable discussion about how the Internet impacts reading habits and comprehension. The guest speakers draw on research as well as personal experience to share different perspectives on the benefits and challenges of reading online.

BEFORE YOU LISTEN

⌚ Time: 35–45 min

A COMMUNICATE (page 124)

To deepen discussion of number one, ask students to explain what a “good” and “bad” reader is. Write on the board:

A good reader is someone who _____.

A bad reader is someone who _____.

Have students work in pairs to complete the definitions. Review student ideas on the board.

B 2.20 THINK CRITICALLY Predict.

(page 124) Audio: 0:52 min

VOCABULARY

C 2.21 (page 125) Audio: 1:50 min

D COMMUNICATE (page 126)

For more practice, go to MyELT.

LISTEN Time: 35–45 min

E 2.22 LISTEN FOR MAIN IDEAS (page 126) Audio: 4:24 min

F 2.22 (page 126) Audio: 4:24 min

Ask students to recall as many answers to exercise F as they can before they listen again.

EXPANSION Ask students to react to the image on page 127. Where is the girl reading? What is she reading? (*a printed book*) Ask the students to share where, what, and how (i.e., print or digital) they like to read.

NOTE-TAKING SKILL 2.23 Use a T-Chart to Take Notes (page 127) Audio: 0:47 min

Remind students to use abbreviations and symbols when taking notes using a T-chart.

G 2.24 LISTEN FOR DETAILS (page 127)

Audio: 1:14 min

After doing the exercise, have pairs of students compare T-charts and fill in any missing information provided by their partner.

LISTENING SKILL 2.25 Recognize a Speaker's Tone (page 128) Audio: 0:22 min

EXPANSION Write some simple phrases on the board, such as *Excuse me!* or *Well, then, tomorrow it is.* In pairs, have students practice saying them with the attitudes and feelings expressed in the box. Encourage them to be dramatic and exaggerate their pitch. Have volunteers say the phrases with different tones as the rest of the class guesses which attitude or feeling they're expressing.

H 2.26 (page 128) Audio: 1:01 min

I 2.26 (page 128) Audio: 1:01 min

Have students explain their answers by describing the pitch, speed, and overall tone of the speaker's voice in each segment.

AFTER YOU LISTEN Time: 25–35 min

J (page 129)

Before students take the quiz, read the questions and answers aloud as a class. Review any new or confusing words or concepts

K THINK CRITICALLY Evaluate. (page 129)

For more practice, go to MyELT.

SPEAKING Time: 45–55 min

SPEAKING SKILL 2.27 Defend a Position (page 130) Audio: 0:28 min

Explain that intonation can also be used when defending your position on a topic. For example, intonation can express seriousness, confidence, or enthusiasm.

For practice with noun clauses in statements, go to MyELT.

PRONUNCIATION SKILL 2.28 Stress Key Words (page 130) Audio: 0:21 min

Have students discuss why the speaker in the example chose to stress the words in bold.

EXPANSION Write on the board: *Talita practiced beach volleyball yesterday.* Have pairs of students say the sentence five times, each time putting stress on a different content word. Ask them to discuss how the stress changes the focus of the statement. Review as a class, stressing different content words in unison. Each time you stress a different content word, have students describe how the focus changes:

- **Talita** practiced beach volleyball yesterday. (*Focus is on who played beach volleyball.*)
- **Talita** **practiced** beach volleyball yesterday. (*Focus is on what Talita did with beach volleyball: practiced instead of competed in.*)

- Talita practiced **beach volleyball** yesterday. (Focus is on what kind of volleyball Talita played.)
- Talita practiced beach **volleyball** yesterday. (Focus is on what beach sport Talita practiced.)
- Talita practiced beach volleyball **yesterday**. (Focus is on when Talita practiced volleyball.)

L **2.29** (page 130) Audio: 0:27 min

M COMMUNICATE (page 131)

Encourage students to also pay attention to their tone as they present their argument.

N THINK CRITICALLY Interpret an Infographic. (page 132)

Use a stopwatch or other time device to keep track of time. When the first group finishes, have them read their answers to the class. If any answers are wrong, don't say which ones are wrong. Have all the groups continue working to find or check their answers and start the time again. Continue until one of the groups answers all the questions correctly.

O THINK CRITICALLY Personalize. (page 133)

EXPANSION Have students analyze and respond to the image. Ask: What different tasks is the mother doing? Do you identify with this scene as a child or as a parent? Explain.

For more practice, go to MyELT.

PART 2 TED TALKS

Build a school in the cloud

SUGATA MITRA'S idea worth spreading is that children can be capable, self-directed learners—and learn an astonishing amount—with the help of the Internet, their peers, and the encouragement of special volunteers.

BEFORE YOU WATCH Time: 35–45 min

A (page 134)

B COMMUNICATE (page 135)

Write the following questions on the board, and have students work in small groups to discuss

them: What special skills have you learned in your life? Who did you learn them from? Where did you learn them? What makes a school different from other places you learn skills? Encourage students to think outside of the box about their skills. For example, they may have learned to cook from their grandparents, and learned at home not at school. Ask volunteers to share their skills and experiences with the class.

C THINK CRITICALLY Predict. (page 135)

Have students explain why they do or do not think the speaker will mention the points to support his opinion in number 2.

VOCABULARY

D **2.30** (page 136) Audio: 1:58 min

E COMMUNICATE (page 137)

Encourage students to use the signal words and phrases in the Speaking Skill box to explain their position and express how strongly they agree or disagree.

learnmore (page 137) Read the caption together. Ask: Are stamps something that will become obsolete in your lifetime? Why or why not?

For more practice, go to MyELT.

WATCH Time: 35–45 min

F **1.34 WATCH FOR MAIN IDEAS**

(pages 137–138) Video: 15:27 min

G **1.35 WATCH FOR DETAILS**

(page 139) Video: 7:42 min

H **1.36 EXPAND YOUR VOCABULARY**

(page 139) Video: 3:16 min

Check understanding of the vocabulary words:

- What do you need to set the stage for a productive school year? (*school supplies, a positive attitude*)
- What is something you wonder about? Complete this question in your own words: *How on Earth _____?*
- Who is someone in history who was ahead of his or her time? Explain. (*Leonardo da Vinci because of his inventions*)

- When was a time when you had to *run the show*?
- What is something that you *don't have the foggiest idea* about?
- What *spare parts* do people keep in their car? (*spare tire, spark plugs, windshield wipers*)

I WATCH MORE (page 139)

For more practice, go to MyELT.

AFTER YOU WATCH Time: 15–20 min

J THINK CRITICALLY Analyze and

Reflect. (page 139)  

Remind students to use abbreviations and symbols as much as possible in their T-charts for number 2.

21C SKILL Work Creatively. As a class, brainstorm ideas about what will be the most common jobs in 50 years. Encourage students to use their imagination. Write student ideas on the board. Have students get in pairs and write a job posting for one of the jobs discussed. Ask them to label the ad with the job title and write a brief description of skills and qualifications needed to complete this job. Encourage them to be creative with titles and specific with descriptions. Then, have each pair of students form a group with another pair of students and share their posting. Finally, have the group discuss if present-day schooling prepares students with the skills and qualifications needed for these future jobs.

PUT IT TOGETHER Time: 15–20 min

A THINK CRITICALLY Synthesize. (page 140)

COMMUNICATE Time: 40–50 min + presentations

ASSIGNMENT Participate in a Panel

Discussion about Sugata Mitra's School in the Cloud. (page 140)

PREPARE

PRESENTATION SKILL ► 1.37 Show Enthusiasm for Your Topic (page 140)

Video: 0:53 min

B (page 140)

PRESENT

C (page 141)

D (page 141)

Have students take notes using a T-chart as one group presents and submit them to you to check for progress with note-taking skills.

E THINK CRITICALLY Evaluate. (page 141)

REFLECT

REFLECT BOX (page 141) Have students review word usage by playing an improvisation word game. In groups of four, have them write each word on one side of a blank card or piece of paper and leave the other side blank. There should be 20 word cards. Have the group sit in a circle with the word cards face-down in a pile in the center of the circle. Be sure the cards are in a random order. To begin, write a topic on the board, such as *technology*. Students take turns drawing a card, saying the vocabulary word aloud, and creating a sentence using the word in the context of the topic written on the board. Each player should create the sentence individually, but other team members can help if necessary. Remind students to stress key words. To challenge themselves, students can create sentences that state a position and include signal words and phrases to defend it: *One thing is clear, Apple makes an absurd amount of money with all the technology products they sell.* Write a new topic on the board every few minutes and announce it to the class. The game continues until each group has played all the cards.

For more practice, go to MyELT.

ANSWER KEY Unit 7

THINK AND DISCUSS (page 123)

1. Answers will vary. (E.g., They are learning how to be pilots. Yes, I'd like to be one of Barrington Irving's students because he seems like he would be inspiring.) 2. Answers will vary. (E.g., The unit will be about how learning fits into our lives.)

The Effect of the Internet on Students' Reading

POSITIVE	NEGATIVE
rd all the time: artcls on intrnt, not books (outdtd) Artcls—up-to-date info rd on intrnt = fun (rd + watch videos) Visual lrnr = videos and pics help lrn	children → non-readers can't concnrt, can't rembr

PART 1

Is the Internet Making Us Bad Readers?

A COMMUNICATE (page 124)

Answers will vary.

H (page 128)

- Segment 1: a
Segment 2: a
Segment 3: c
Segment 4: b

I (page 128)

See answers for exercise H.

J (page 129)

Answers will vary.

K THINK CRITICALLY Evaluate. (page 129)

Answers will vary.

L (page 130)

That said, research suggests that the Internet impacts our ability to concentrate on one thing over an extended period of time, say 30 minutes. This makes "deep reading"—that is, concentrated reading, not just skimming quickly for information—more difficult.

M COMMUNICATE (page 131)

Answers will vary.

N THINK CRITICALLY Interpret an Infographic. (page 132)

- 2%
- 20 minutes
- They both use the prefrontal cortex. Answers to the second question will vary. (E.g., This might impact learning because if someone is studying while using social media, their brain may tire more easily.)
- It can lower them.

O THINK CRITICALLY Personalize. (page 133)

Answers will vary.

PART 2 TED TALKS

Build a school in the cloud

A (page 134)

Answers will vary. (E.g., “In the cloud” means online or on the Internet. Mitra wants to build an online school.)

B COMMUNICATE (page 135)

Answers will vary.

C THINK CRITICALLY Predict. (page 135)

1. Answers will vary. (E.g., *Obsolete* means “no longer used, out-of-date.” Things that are now obsolete include pagers, typewriters, movie rental stores, paper phone books, VCRs, public pay phones, etc.)
2. Answers will vary. (E.g., All of the answers are plausible, but not all will be mentioned in the talk.)

D VOCABULARY (page 136)

1. a 2. c 3. a 4. c 5. c 6. a 7. b
8. a 9. b 10. b

E COMMUNICATE (page 137)

Answers will vary.

F WATCH FOR MAIN IDEAS (pages 137–138)

Segment 1: 2
Segment 2: 6
Segment 3: 9
Segment 4: 11
Segment 5: 13

G WATCH FOR DETAILS (page 139)

- a. 3 b. 4 c. 1 d. 6 e. 7 f. 2 g. 8 h. 5

H EXPAND YOUR VOCABULARY (page 139)

1. a 2. c 3. b 4. c 5. b 6. a

J THINK CRITICALLY Analyze and Reflect. (page 139)

1. Answers will vary. (E.g., Examples of data he gives to support his ideas are: children who didn’t know how to use a computer or speak English were motivated enough to learn enough English in order to be able to figure out how to

use the computer; the poorest schools caught up with the level of the richest schools in a very short period of time by using his method; his SOLES are having excellent success in putting the learning into the hands of the students.)

2. Answers will vary. (E.g., See T-chart below.)

Mitra’s School in the Cloud	
ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none">• Children are more interested and engaged in school.• Children learn skills more relevant to their future lives and careers.• Children from poorer communities can have the same educational opportunities as children from wealthier communities.	<ul style="list-style-type: none">• Children’s learning is more difficult to control.• Children don’t learn basic reading, writing, and math skills.• It might be hard to find and train teachers who are willing to use these very new methods of education.

3. Answers will vary.

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 140)

1. Answers will vary. (E.g., Mitra would probably not agree that the Internet is making us stupid, or bad readers, as he appears to believe that technology and computers have more potential for good than harm, especially in regards to education.)
2. Answers will vary. (E.g., Mitra would probably disagree that it’s absurd that kids don’t want to remember information they can look up on the Internet. He believes the current methods of education are out-of-date, and that students don’t all need to learn and know identical information.)
3. Answers will vary. (E.g., Mitra would almost definitely agree that reading on the Internet is fun, and that videos and pictures help with learning. He stresses the importance of children learning what they want to learn online, and illustrates how they can learn complex information through using tools on the Internet.)

B—REFLECT (pages 140–141)

Answers will vary.

UNIT 8 DIY: Do It Yourself

PART 1

The Psychology behind DIY

Listening

Understand Content-Rich Material

Speaking

Explain a Process

Pronunciation

Intonation in Lists

PART 2

TED TALKS

Marcin Jakubowski

Open-sourced blueprints for civilization

Note Taking

Record Information from Lists

PUT IT TOGETHER

Communicate

Present and Explain a Process

Presentation Skill

Organize Information in a Logical Sequence

UNIT THEME

Unit 8 explores open-source methods and tools that make sustainable living a reality, increasing access to a happier and healthier life.

ACADEMIC TRACK

Technology

UNIT OPENER

⌚ Time: 5–10 min

Ask guiding questions, such as:

- What do you see? (*a man driving a tractor*)
- How would you describe the tractor? (*open-source, handmade, bright, futuristic*)
- Would you like to own and drive this tractor? Why or why not?

THINK AND DISCUSS (page 143)

Possible answers:

1. *I have heard of DIY—it's become very popular. Projects such as home decorating or renovation are typically DIY.*
2. *Open Source Ecology encourages DIY construction of machines that help people build places to live.*

PART 1

The Psychology behind DIY

► Slideshow available.

The listening is a university lecture about the psychology behind DIY. The professor presents two research experiments on DIY, and asks her students to interpret the results to explore reasons behind the popularity of DIY projects.

BEFORE YOU LISTEN

⌚ Time: 35–45 min

A COMMUNICATE (page 144)

Ask students to share a DIY project they have done or are working on. These could include jewelry or other accessories, home decorations or renovations, arts or crafts, cooking, etc. Write the following prompts on the board: Describe your DIY project. Was it challenging? Explain. Why did you choose to DIY instead of buy? Would you do it again? Why or why not? Give students some time to reflect, and then have them share their experiences in small groups. After, have volunteers share their experiences, their favorite DIY projects mentioned by their classmates, and any DIY ideas they want to try.

B  **2.31 THINK CRITICALLY Predict.**

(page 144) Audio: 1:28 min

Write student predictions on the board. After listening to the lecture, return to the list to see how many of their questions were answered.

VOCABULARY**C**  **2.32** (page 145) Audio: 2:00 min**D COMMUNICATE** (page 146) **For more practice, go to MyELT.****LISTEN**  Time: 25–35 min**LISTENING SKILL**  **2.33 Understand****Content-Rich Material** (page 146) Audio: 0:24 min

In pairs, have students discuss any content-rich material that typically makes them feel overwhelmed. Have volunteers share their experiences and explain why they felt overwhelmed.

For more practice, go to MyELT.**E**   **2.34**  **1.38 LISTEN FOR MAIN IDEAS**

(pages 146–147) Audio: 7:39 min Video: 6:02 min

Pause the slideshow when you see the questions about the experiments to give students time to predict the results. The audio includes built-in pauses.

F  **2.35 LISTEN FOR DETAILS** (page 147)

Audio: 1:26 min

G  **2.36 LISTEN FOR DETAILS** (page 148)

Audio: 1:03 min

AFTER YOU LISTEN  Time: 25–35 min**H COMMUNICATE** (page 148)

Have students consider the products they spend the most money on. Ask: Would you be able to make or build them yourself? Would you want to? Why or why not?

I THINK CRITICALLY Interpret an Infographic. (page 149) 

EXPANSION In small groups, have students do an Internet search for popular home

improvement TV shows, Web sites, and décor magazines, either in class or as a homework assignment. They should choose one source of DIY inspiration and answer these questions: What projects are shown? Which ones look hard to do? Easy to do? Which ones would you like to try and why? Have each group report their answers to the class.

For more practice, go to MyELT.**SPEAKING**  Time: 35–45 min**SPEAKING SKILL**  **2.37 Explain a****Process** (page 150) Audio: 0:48 min

EXPANSION Have students recall the steps they took to complete an activity recently. Then, have them explain to a partner what they did, using signal words and phrases. For example, renting an apartment: **First**, I used Web sites to search for apartments for rent. **Then**, I got in contact with the landlords. **Before** visiting apartments, I wrote a list of all the questions I wanted to ask. **Finally**, I saw three apartments and found one that was a good match.

J COLLABORATE (page 150)

To practice fluency, have students repeat the task once or twice more, each time with a new partner.

EXPANSION Have students look up and learn an origami design. Simple ones include an origami boat, table, hat, envelope, or frog, but if students have experience with origami, they may choose a more complicated one. Once they've successfully made their own origami, have students find a partner who chose a different design. Students dictate instructions using signal words and phrases and the imperative form. Their partner tries to make the origami figure following the instructions. Encourage students not to show their partners their own completed origami or images of it until the end of the dictation. Alternately, you can choose a few origami figures to have the whole class make and bring in the instructions. Have volunteers come to the front of the class and dictate the instructions. See whose origami best matches the image in the instructions.

PRONUNCIATION SKILL**2.38 Intonation in****Lists** (page 151) Audio: 0:19 min

Explain that the information presents patterns, not fixed rules, but that learning to notice and use intonation in lists will help students' overall comprehension and comprehensibility.

K **2.39** (page 151) Audio: 0:56 min **L** **2.39** (page 151) Audio: 0:56 min**M COMMUNICATE** (page 151)

For more practice, go to MyELT.

self-sustaining village. What kind of machines might the shoemaker need open-source blueprints for? (*A shoemaker can repair old shoes and make new ones using basic machines. People would not need to buy shoes anywhere else. The shoemaker would need blueprints for sewing, cutting, and polishing machines.*)

E COMMUNICATE (page 155)

EXPANSION Have students stand up and mingle with classmates to share and compare their answers. For each question, students find a new partner. Each partner takes a turn talking about the topic for one minute. Keep time and then ask students to find a new partner for the next question. Repeat.

For more practice, go to MyELT.

PART 2 TED TALKS*Open-sourced blueprints for civilization*

MARCIN JAKUBOWSKI'S idea worth spreading is that open-source technology can enable human creativity and create more environmentally sustainable methods of production.

BEFORE YOU WATCH Time: 35–45 min**A** (page 153)

Check understanding of the key terms:

- What kind of information or media is *open-sourced*? (*some academic journals, software, phone applications, university courses*)
- Who typically works with *blueprints*? (*city planners, architects, construction workers*)
- What might be easy to create in a *self-sustaining* village? What might be hard to create? (*Easy: gardens; Hard: power sources*)
- What would be in a cooking starter kit? (*ingredients, recipe*)

B COMMUNICATE (page 153) **C THINK CRITICALLY Predict.** (page 154)**VOCABULARY****D** **2.40** (pages 154–155) Audio: 2:19 min

21C SKILL Reason Effectively. Ask students to explain how the photo relates to the idea of a

WATCH Time: 45–55 min**F** **1.39 WATCH FOR MAIN IDEAS** (page 155)

Video: 4:10 min

learnmore (page 156) Ask: How do CSAs help the environment?

NOTE-TAKING SKILL Record Information from Lists (page 156)**G** **1.40 WATCH FOR DETAILS**

(pages 156–157) Video: 3:48 min

H COMMUNICATE (page 157)

Remind students to use rising intonation on all of the items in their lists except for the last one as they share their notes from exercise G.

I **1.41** (page 157) Video: 2:27 min**J COMMUNICATE** (page 157)

21C SKILL Analyze Alternative Views. Ask students what kinds of social, economic, or political barriers might there be to setting up a sustainable farming community. Would these barriers differ in different parts of the world? Have students discuss in groups, and ask them to provide real-life examples and evidence if possible.

K ►1.42 EXPAND YOUR VOCABULARY

(page 157) Video: 3:01 min

Check understanding of the vocabulary words:

- Where can you buy clothes or household items *at a fraction of the cost?* (*second-hand stores, outlets, online*)
- What is one thing you would never sell, even if you *were going broke*? Why?
- What would you do if someone just *showed up* at your house?
- How do people *unleash* their emotions?
- What would be the hardest part of managing *supply chains*?

For more practice, go to MyELT.

AFTER YOU WATCH



Time: 25–35 min

L THINK CRITICALLY Evaluate. (page 158)

Review machine names and descriptions as a class before students discuss. If possible, display images of the different machines as you review.

M THINK CRITICALLY Compare. (page 158)

N COMMUNICATE (page 158)

PUT IT TOGETHER



Time: 15–20 min

A THINK CRITICALLY Synthesize. (page 159)

EXPANSION Have students visually represent their group's ideas by comparing the motivations and benefits of *DIY* versus *buy* in a T-chart. Have groups share their ideas with another group, and report back to the class any new ideas they learned from the other group.

COMMUNICATE



Time: 40–50 min + presentations

ASSIGNMENT Present and Explain a Process to a partner. (page 159)

ALTERNATE ASSIGNMENT Have students demonstrate a process while they explain the steps to a partner or the whole class. Make sure students choose a process for which they can bring in the materials to class.

PREPARE

PRESENTATION SKILL Organize Information in a Logical Sequence (page 159)

B ►1.43 (page 160)

Video: 1:00 min
Have students compare answers in pairs, identify any signpost language, add in additional signpost words or phrases where appropriate, and then take turns verbally summarizing the process.

C (page 160)

As students decide, write their topics on the board for the class to see to inspire ideas in others and to assure diversity.

D (page 161)

Encourage students to bring in relevant props or objects to maintain interest and assist comprehension.

PRESENT

E (page 161)

F (page 161)

G THINK CRITICALLY Evaluate. (page 161)

REFLECT

REFLECT BOX (page 161) To review word usage, have students work in pairs and write a letter to a friend explaining what a "civilization starter kit" is. All 20 vocabulary words should be included and used in a meaningful and relevant way. Ask students to underline the vocabulary words in their letters before turning them in.

For more practice, go to MyELT.

ANSWER KEY Unit 8

THINK AND DISCUSS (page 143)

1. Answers will vary. (E.g., I have heard of DIY—it's become very popular. Projects such as home decorating or renovation are typically DIY.)
2. Answers will vary. (E.g., Open Source Ecology encourages DIY construction of machines that help people build places to live.)

PART 1

The Psychology behind DIY

A COMMUNICATE (page 144)

1. Answers will vary. (E.g., They are remodeling, or fixing up, an old home. They might feel excited, nervous, tired, etc.) 2. Answers will vary. (E.g., Some people might like to do DIY projects because it's cheaper than hiring someone, it gives them a way to be creative, they can work with their hands, it challenges them, and they enjoy the final product more because of their hard work.) 3. Answers will vary. (E.g., For all of the reasons listed in number 2, and also because they can personalize the things they make.) 4. Answers will vary.

B THINK CRITICALLY Predict. (page 144)

Answers will vary. (E.g., What is the psychology behind DIY? How can businesses use psychology to understand if DIY will remain popular?)

C VOCABULARY (page 145)

1. c 2. c 3. b 4. a 5. a 6. b 7. b
8. c 9. b 10. b

D COMMUNICATE (page 146)

Answers will vary.

E LISTEN FOR MAIN IDEAS (pages 146–147)

Segment 1

1. Answers will vary. (E.g., Results: most people in Group 1 did nothing. They did not work on the bracelet because there was no real reason to do so; they would just be taking the bracelet apart and putting it back together again in exactly the same way. They probably could not see the

point in doing that.) 2. Answers will vary. (E.g., Results: most people in Group 2 worked on the bracelet. They did so because they had a reason to do it—to change the bracelet's design.)

Segment 2

3. Answers will vary. (E.g., Results: they put a higher value on their own frogs, because people have a strong tendency to overvalue things that they do or make themselves.) 4. Answers will vary. (E.g., Results: they put a higher value on the expert-made frogs. They did not make the frogs themselves, so they were able to see that the expert-made frogs were of a higher quality and thus worth more than the ones made by the experiment participants.)

F LISTEN FOR DETAILS (page 147)

- a. 2 b. 4 c. 3 d. 1 e. 7 f. 6 g. 8 h. 5

G LISTEN FOR DETAILS (page 148)

- a. 2 b. 1 c. 4 d. 3

H COMMUNICATE (page 148)

Answers will vary.

I THINK CRITICALLY Interpret an Infographic. (page 149)

1. Home improvement TV shows. Answers to the second question will vary.
2. Answers will vary.
3. Answers will vary.
4. Answers will vary.
5. Answers will vary. (E.g., Other explanations could be cultural—Americans are very individualistic and value doing work without the help of others—or financial—it's cheaper to make and do things yourself.)

J COLLABORATE (page 150)

Step 1: Answers will vary. (E.g., First, the researchers divided the participants into two groups. They put each participant in a separate room with a bracelet in it, and they did not let the participants take anything into the room with them. Then, they told the participants to stay in the room for 15 minutes. They gave each participant a choice. They could take the bracelet apart and put it back together, or they could

do nothing. Next, they gave each participant a different version of the instructions. They told the participants in group one that if they took the bracelet apart, they had to put it back together in exactly the same way. They gave half of the participants instructions on how to take the bracelet apart and create a new design. Finally, they left the participants alone for 15 minutes.)

Step 2: Answers will vary. (E.g., First, divide the participants into two groups. Second, put each participant into a separate room with a bracelet in it. Do not let the participants take anything into the room with them. Next, tell the participants to stay in the room for 15 minutes. Then, give each participant a choice: take the bracelet apart and put it back together again, or do nothing. Give each participant a different version of instructions. Tell half of the participants that if they take the bracelet apart, they have to put it back together in exactly the same way. Give half of the participants instructions on how to take the bracelet apart and create a new design. Finally, leave the participants alone for 15 minutes.)

Step 3: Answers will vary.

K (page 151)

1. There are many Web sites where you can design your own products; for example

T-shirts, sneakers, jeans, or cell-phone cover.

2. DIY projects include cooking, gardening,

knitting, and sewing.

3. There are DIY projects for all age groups:

children, teenagers, adults, and the elderly.

4. People enjoy making origami of animals such

as birds, fish, or insects.

5. Researchers have conducted many experiments to test the effects of idleness

on people's mental, emotional, and physical health.

L (page 151)

See answers for exercise K.

M COMMUNICATE (page 151)

Answers will vary.

PART 2 TEDTALKS

Open-sourced blueprints for civilization

A (page 153)

Answers will vary.

B COMMUNICATE (page 153)

1. Answers will vary. (E.g., to help people who live in isolated areas, or in very poor areas)
2. Answers will vary. (E.g., for houses, schools, barns, crop fields, energy sources (such as water or solar power), etc.)
3. Answers will vary. (E.g., blueprints for simple construction of everything needed to start a self-sustaining village)
4. Answers will vary. (E.g., blueprints, or instructions, for how to set up a new town where people can live and govern themselves)

C THINK CRITICALLY Predict. (page 154)

Answers will vary.

D VOCABULARY (pages 154–155)

1. set out
2. supply
3. scarcity
4. settlement
5. productivity
6. scale
7. means
8. distribution
9. sound
10. transcend

E COMMUNICATE (page 155)

Answers will vary.

F WATCH FOR MAIN IDEAS (page 155)

- 2, 4, and 5

G WATCH FOR DETAILS (pages 156–157)

Segment 1: Answers will vary. (E.g., Background: Farmer, technologist, fr. Poland, now in U.S.; Important machines: Tractors, bread ovens, circuit makers)

Segment 2: Answers will vary. (E.g., Robust, modular, ↑ efficient + optimized, ↓ cost, made fr local + recycle matrls—last lifetime, NOT become obsolete)

Segment 3: Answers will vary. (E.g., 3D designs, schematics, instruct videos, budgets)

Segment 4: Answers will vary. (E.g., Farming, building, manufacturing)

Segment 5: Answers will vary. (E.g., Who: developing wrld, Amer farmer, builder, entrepr, maker; What: strt construc bus, parts manufact, orgnc CSA, sell power back to grid)

H COMMUNICATE (page 157)

See answers to exercise G.

I (page 157)

Segment 1

1. a

Segment 2

2. b

Segment 3

3. b

J COMMUNICATE (page 157)

See answers to exercise I.

K EXPAND YOUR VOCABULARY (page 157)

1. a 2. c 3. a 4. c 5. b

L THINK CRITICALLY Evaluate. (page 158)

Answers will vary.

M THINK CRITICALLY Compare. (page 158)

Answers will vary.

N COMMUNICATE (page 158)

Answers will vary.

PUT IT TOGETHER

A THINK CRITICALLY Synthesize. (page 159)

1. Answers will vary. (E.g., people are happier when they're busy; they would rather be busy if there is a reason (such as needing something that they have to build or make); they feel more pride in the things that they do or make themselves; they believe they can do or make things better than what already exists; they believe they can do or make things for less money than hiring someone)
2. Answers will vary. (E.g., people are happier; they stay busy; they have things they value more; they have better things than what's universally available; they get to use their creativity; they can possibly help other people; they can save money)

B (page 160)

a. 4 b. 9 c. 7 d. 1 e. 6 f. 2 g. 5
h. 3 i. 8

C—REFLECT (pages 160–161)

Answers will vary.

Audio Scripts

Unit 1

AUDIO TRACK 1.2 2:14 min

Part 1, Page 4, Exercise B, Think Critically: Predict

Welcome to today's show on Business Talk. These days, it seems to me that everyone is starting or thinking about starting their own business. Just last week, I got hundreds of emails from 20-somethings (most of them living in their parents' basements) asking for advice on how to become the next Mark Zuckerberg. Now in case you've been living in your parents' basement for too long and don't get out much, Mark Zuckerberg is the guy who started Facebook at the age of 24. He's now an old guy—in his 30's—and his wealth is estimated at more than 30 billion dollars.

I've been doing this show for a lot of years, but I have never seen anything like this before. It's really striking. In the past, most middle-class kids would graduate from college, find a job, collect a paycheck, settle down and get married, buy a house, and have some kids—usually in that order.

In those days, maybe ten people a week would contact me to get my advice about starting their own businesses. But nowadays, with a difficult job market, rapid technological change, news all over the media about the so-called "overnight success" of entrepreneurs like Mark Zuckerberg, and television shows like Shark Tank—where people try to sell their ideas to investors with the money to help them start their own businesses—everybody thinks that they are going to become the next Bill Gates.

And that brings me to today's show. My purpose? It's simple. My inbox is full. I want to stop, or at least slow down, the traffic of email from all of you who think you would make great business owners. So here goes. Warning: This is not a reality TV show. It is just plain reality. Oh, and as always, you can check out our website for some additional information about today's podcast.

AUDIO TRACK 1.3 1:44 min

Page 5, Exercise C, Vocabulary

- a. His business success brought him great **wealth** at an early age. He was a billionaire by the age of 30.
- b. Experts **estimate** that the number of people employed by small businesses will grow by 10 percent in the next 20 years.
- c. Wow, the new design makes the restaurant look completely different. The change is really **striking!**
- d. In my country, many young people **settle down** very soon after college. By the age of 30, most are married and have one or two children.
- e. That singer was an **overnight success**. One day she was singing in a small club for almost no money, and the next day she had a number one song!
- f. He didn't have any money of his own, so he had to find an **investor** to help him start his business.
- g. He has been working 24 hours a day for three days, without any sleep at all. He plans on spending the whole weekend in bed to **catch up on** his sleep.
- h. He's retired now. His daughter **runs the business**.

- i. She complains **constantly**. She never has anything positive to say.
- j. Owning a business is more difficult than most people think. In fact, many small businesses enter into **bankruptcy** within a year or two of opening.

AUDIO TRACK 1.4 5:33 min

Page 6, Exercise E, Listen for Main Ideas

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First, running a business is hard work. Really hard work. 100 hours a week of hard work.—At least. Seven-days a week of hard work. No kidding. Just ask Robert. Robert is a French chef who owns a café serving breakfast and lunch. He also makes food for parties and special events. Every day, he gets up at 2:00 or 3:00 AM and drives to the restaurant. He usually doesn't get home until 4:00 PM, unless he has a large party or special event. On those days, he might not get home until 10 PM or later. The next day, he gets up and does it all over again. The only day the shop is closed is on Sundays, but even then Robert usually spends hours at the shop catching up on paperwork or getting ready for the week to come. In other words, he works constantly. His advice to would-be small business owners? Do not fool yourself. The freedom of being your own boss might sound great, but say goodbye to free time.

Second, most business owners never get rich. In fact, about one third of businesses fail within one year, and about half fail within five years. And even businesses that have done great for years can suddenly fail. Don't believe me? Just ask Gail Horvath. She and her husband started a company in San Francisco called *Just Desserts*. They made and sold high quality desserts for 30 years until a couple of bad business decisions sent the company into bankruptcy. So . . . do you want to lose your business and all of your

money? Great, send me an email, and we can talk about how you can get started!

Third, do you want a family life? Do you want to be able to recognize your own children in a crowd? Good luck with that. The fact is that many entrepreneurs end up divorced. The story of Tony, a software and media entrepreneur, is not unusual. Tony admits that he put his wife through eight years of suffering while he created and tried to sell a television show. With two young children and no idea where the next paycheck would come from, Tony's wife gave him a choice: the TV show or her. He chose the TV show. She chose divorce. Do you really want to make that choice?

OK, so if you've listened to all of this and are still interested in starting your own business, great! Now go back and listen again, once a day for seven days. Got it? Seven days—the same number of days a week you will be working if you start your own business. Oh, and make sure you listen at 4:00 AM. Why? That's the time you will either be getting up to start your 20-hour workday, or going to bed after you've worked 20 hours straight. If at the end of the seven days, you are still interested in starting your own business, congratulations. You just might be the next Mark Zuckerberg . . . and yes, I'll answer your email.

That's it for today's podcast. Tomorrow, I'll be interviewing . . .

AUDIO TRACK 1.5 5:43 min

Page 7, Exercise F, Listen for Details

Segment 1

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Segment 2

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Segment 3

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Segment 4

Third, do you want a family life? Do you want to be able to recognize your own children in a crowd? Good luck with that. The fact is that many entrepreneurs end up divorced. The story of Tony, a software and media entrepreneur, is not unusual. Tony admits that he put his wife through eight years of suffering while he created and tried to sell a television show. With two young children and no idea where the next paycheck would come from, Tony's wife gave him a choice: the TV show or her. He chose the TV show. She chose divorce. Do you really want to make that choice?

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That's it for today's podcast. Tomorrow, I'll be interviewing . . .

AUDIO TRACK 1.6 0:33 min

Page 8, Listening Skill: Identify Main Points and Story Examples

Examples:

First, running a business is hard work. Just ask Robert. Robert is a French chef who owns a café serving breakfast and lunch . . .

His advice to would-be small business owners? Do not fool yourself. The freedom of being your own boss might sound great, but say goodbye to free time.

AUDIO TRACK 1.7 2:44 min

Pages 8 and 9, Exercise G and Exercise H, Listen and Take Notes

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AUDIO TRACK 1.8 0:25 min

Page 12, Pronunciation Skill: Intonation and Pauses:
Continuing and Concluding

Examples:

In other words, he works constantly.

These days, it seems to me that everyone is starting, or thinking about starting, their own business.

AUDIO TRACK 1.9 0:36 min

Page 12, Exercises N and O

Warning: This is not a reality TV show. It is just plain reality.

First, running a business is hard work. Really hard work. 100 hours a week of hard work.—At least. Seven days a week of hard work. No kidding. Just ask Robert. Robert is a French chef who owns a café serving breakfast and lunch.

AUDIO TRACK 1.10 1:44 min

Part 2, Pages 14 and 15, Exercise D, Vocabulary

1. Some of my ideas in exercise B **overlapped** with my partner's, but some were different.
2. He comes from a **humble** background. Neither of his parents graduated from high school. Despite this, he became a very successful businessman.
3. When he read the university catalogue, he was excited about the large number of course offerings. He felt that he could study anything; his choices seemed **infinite**!

4. After finally achieving her dream of opening a new bakery, she had to close it after a year because she wasn't bringing in enough **revenue** to support her family.
5. The director's first movie, *Fear*, was so successful that they made a **sequel**, *Fear II*.
6. Most professional athletes, such as tennis players, reach their **peak** when they are in their 20s or 30s. That is when they are most competitive.
7. People often say that life is about the **journey**, not the final destination.
8. Be careful where you walk. The ground is uneven. I don't want you to **trip**.
9. If you go to business school, you are not **guaranteed** a good job when you graduate, but your chances are better.
10. I made more money in my **prior** job, but I prefer this one.

Unit 2

AUDIO TRACK 1.11 1:18 min

Part 1, Page 25, Exercise C, Vocabulary

- a. Thousands of years ago, before there were any written languages, our human **ancestors** used pictures and **symbols** to communicate. Even with just simple symbols and pictures, they managed to communicate **complex** messages.
- b. In addition to spoken language, all human beings also use body language to help them **get across** their ideas. The use of body language, which includes both **gestures** with your hands and **facial expressions**, such as a smile, is **universal**.
- c. English has a lot of **compound** words for weather. Two examples include *sunlight* (*sun + light*) and *snowstorm* (*snow + storm*).
- d. In informal conversation in English, **reductions** are quite common. For example, *be going to* sounds like *gonna*, and *have to* sounds like *hafta*.
- e. With the Internet, it is easy to **spread** information from one side of the world to the other in just minutes.

AUDIO TRACK 1.12 4:53 min

Page 27, Exercise E, Listen for Main Ideas and Exercise G, Listen for Details

PODCAST HOST Good afternoon, and welcome to Communicating in the 21st Century. Our topic today is how using emoticons and emoji in texting, tweeting, and instant messaging is affecting the way we communicate. Go to our website if you'd like to see some of what I'm going to describe.

First, let's make sure everyone understands the terms *emoticon* and *emoji*. The word emoticon is a combination of two words: emotion and icon. An icon is a type of symbol, such as a drawing of a heart broken into two pieces to mean heartbroken.

Emoticons express both feelings and ideas in online communication.

As far as we know, a computer scientist named Scott Fahlman invented the first emoticon in 1982. You're probably familiar with it—it's a smiling face on its side. So, as you can see from this early example, emoticons are simple pictures made from punctuation or other non-letter symbols.

Emoji, on the other hand, are small, cartoon-like pictures of just about anything—from a doghouse to a watermelon. The word emoji is a Japanese word and is similar to a compound word in English—that is, a combination of two words to make one word, such as *basketball* or *sunlight*. The first character is e-, which means picture, and the second one is -*moji*, which means character.

Why the Japanese word? Because the first emoji were invented in Japan. At the end of the 1990s, a Japanese mobile network wanted to attract more teenage customers. So an employee, Shigetaka Kurita and his team invented 176 characters and made them available for use in instant messages. These playful characters, or emoji, became immediately popular with the Japanese, who, at least according to author Motoko Tamamuro, often feel more comfortable using indirect ways to get their ideas across, especially when sharing their feelings.

It seems that the desire to express our feelings through pictures is universal, however, because emoji quickly spread all over the world.

But emoji and emoticons can express much more than feelings. There are emoji animals, plants, weather and food, among many others. We can put them together to make an emoji “sentence.” And a lot of emoticons are much more complex than just a smiling face.

Thus, people often use emoji and emoticons to replace the written word. And that brings us to our discussion topic for today: How are emoticons and emoji affecting communication?

Some say that this use of pictures is a sign that we are losing the ability to communicate complex ideas. They point out that our ancestors used pictures to communicate thousands of years ago, before the invention of writing. From this point of view, then, emoji and emoticons are like pictures scratched on rocks, and are a step backward to an earlier time, before the invention of writing.

But there are also strong supporters of emoji and emoticons. They argue that rather than taking something away from written language, emoji and emoticons improve it. How? They compare emoji and emoticons to facial expressions, such as raising your eyebrows, and gestures, such as shrugging your shoulders. They believe that emoji and emoticons add meaning to the written word or even change a word's meaning completely. Thus, they argue, emoji and emoticons are a step forward.

Still other people argue that texting, instant messaging, and tweeting are not really written language at all—they are much closer to oral conversation. Abbreviations such as the letter “u” for the pronoun “you” are similar to the natural reductions of informal speech, for instance “gonna” for “be going to.”

So, what do you think? Are emoji and emoticons like word-eating locusts that will end up killing the written word? Or are they more like honeybees that pollinate our writing and allow us to grow our ideas and spread them over large distances? To join the conversation, call, text or tweet us at . . .

AUDIO TRACK 1.13 2:30 min

Page 28, Exercise H

Segment 1

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Segment 2

Some say that this use of pictures is a sign that we are losing the ability to communicate complex ideas. They point out that our ancestors used pictures to communicate thousands of years ago, before the invention of writing. From this point of view, then, emoji and emoticons are like pictures scratched on rocks, and are a step backward to an earlier time, before the invention of writing.

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AUDIO TRACK 1.14 1:11 min

Page 29, Exercise I

Some say that this use of pictures is a sign that we are losing the ability to communicate complex ideas. They point out that our ancestors used pictures to communicate thousands of years ago, before the invention of writing. From this point of view, then, emoji and emoticons are like pictures scratched on rocks, and are a step backward to an earlier time, before the invention of writing.

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AUDIO TRACK 1.15 0:30 min

Page 31, Pronunciation Skill: Compound Words

Examples:

basketball earrings eyebrows honeybee
heartbroken homework snowstorm sunlight

AUDIO TRACK 1.16 2:06 min

Part 2, Pages 33 and 34, Exercise C, Vocabulary

1. Our use of our native language is **unconscious**. We are not aware of the grammar rules, but we can still speak correctly.

2. People with good **manners** use polite language. They do not use rude or abusive terms.
3. People who write dictionaries are usually **linguists**. When they are at university, they study how languages work.
4. Word **usage** changes over time. For example, before Facebook existed, *friend* was only used as a noun. However, it is now used as a verb.
5. We should not **discourage** children from using language in creative ways. We should support their creativity.
6. Don't **squish** all of your words on the same line! It makes your writing very difficult to read.
7. Unusual words **grab** people's **attention**. When you use them, people become interested and listen carefully to you.
8. The meanings of words can change over time. For example, in the 14th century, *girl* meant a female or male child. Later, there was a **shift** in meaning, and *girl* now only refers to females.
9. Television **commercials** help companies sell products. The best ones use words and pictures in unusual ways. This helps people remember the product.
10. The word *camcorder* is a **blend** word. It combines parts of two words—*camera* and *recorder*—to form a new word, with its own definition: a camera that can record videos.

Unit 3

AUDIO TRACK 1.17 1:45 min

Part 1, Page 45, Exercise C, Vocabulary

- a. Police and firemen are usually the first **responders** to a disaster.
- b. There were only five **survivors** of the plane crash. Everyone else died.
- c. Experts are always looking for better ways to respond to a disaster. They are open to **innovative** ideas that no one has ever thought of before.
- d. The **sensors** in the latest fire alarms work very well. They can detect the presence of smoke immediately.
- e. When you **activate** the fire alarm, the elevators stop working immediately.
- f. To remember and respect those who died in the fire, the town placed a statue on the **site** where the building burned down.
- g. In a fire, elevators are automatically locked and people are unable to **access** them. That is because it is very dangerous to use an elevator during a fire.
- h. The whole town was **devastated** by the fire. Almost everyone knew someone who was injured or died.
- i. It is dangerous to go into the **wilderness** alone. You could be attacked by a wild animal or fall down and injure yourself, and no one would be able to find you.
- j. You should never **underestimate** the power of the ocean. It might look very beautiful, but it can suddenly become extremely dangerous.

AUDIO TRACK 1.18 4:47 min

Pages 46 and 47, Exercise E, Listen for Main Ideas and Exercise F, Listen for Details

PROFESSOR Today we're going to talk about animal heroes—that is, animals that help save human lives. Let's start with man's best friend, the dog. Dogs have been used

for search and rescue since at least the 17th century, when they helped rescue lost and injured travelers in the Western Alps.

Monks from the St. Bernard Hospice and Monastery, located in the 49-mile St. Bernard Pass between Switzerland and Italy, kept a breed of dog with an excellent sense of direction. Due to their sense of direction, the dogs were very helpful in the heavy snowstorms that were common in the area. However, the monks soon discovered that the dogs had another, equally valuable skill. They were able to find people buried under the snow by avalanches. How? By using their sense of smell, estimated to be 10,000-100,000 times stronger than ours. Over the next 200 years, dogs rescued more than 2,000 people in the St. Bernard Pass.

Today, as you probably know, dogs are among the first responders to disasters. Search and rescue dogs are specially trained to find survivors buried in the rubble after a disaster. Due to innovative technology, search and rescue dogs are becoming even more effective. The Fido Vest is one example.

It has sensors on it that dogs can be trained to activate. How does it work? Well, imagine a plane crash in a mountainous area without roads. A dog wearing a Fido Vest is sent out to find survivors. When the dog finds a survivor, he activates a global positioning system, or GPS, on the vest. The sensor sends the location to his human partner, who then sends help to the site. Although the vest is still being tested, in the future it could lower the cost and improve the success of search and rescue missions in difficult to access areas.

OK, now let's move on to an unusual animal hero: the rat. Rats are used not in search and rescue, but rather to prevent deaths in areas devastated by war.

During wartime, soldiers often bury small bombs underground. These bombs, called landmines, explode when stepped on. When a war is over, it is very difficult to remove all of the landmines. That's why years after a war, people continue to be killed.

The solution? Rats. Like dogs, rats have an extraordinary sense of smell. They can be trained to scratch at the ground when they smell TNT, the explosive chemical used in most landmines. And they are fast: in 20 minutes, one rat can search an area that would take a human searcher up to four days. The rats can also do it safely because, unlike humans, they do not weigh enough to set off the mines. After the rats indicate the exact locations of the mines, their human partners can safely explode them.

The final animal we will talk about today is the raven. Do you know the expression "bird brain"? It's used to refer to someone who's done something stupid. Because birds' brains are very small, people assumed that they were not very smart. Well, this assumption has been disproven. In fact, scientists are learning more about bird intelligence every day. And ravens are among the most intelligent. But are they trainable? According to Emily Corey, a graduate student at the University of Arizona, the answer is "absolutely!" She believes ravens would make excellent search and rescue animals. Why? First, because of their intelligence; second, because of their ability to form close relationships with humans; third, because of their excellent eyesight; and finally, because they can cover large distances quickly. But how can even a *trained* bird rescue someone? Here's one idea: ravens wearing geospatial locators could find people lost in the wilderness. First, the raven would fly over the area where the person was last seen. After locating the person, the raven would return to its human partner,

who would use the data from the locator to send rescuers to the site.

While Corey's research is just getting started, she warns us not to underestimate the raven. Who knows? It could become the next hero of the animal kingdom.

OK, I'll stop there to leave time for questions . . .

AUDIO TRACK 1.19 0:21 min

Page 48, Listening Skill: Ask Questions While Listening

Example:

Today we're going to talk about animal heroes—that is, animals that help save human lives. Let's start with man's best friend, the dog.

AUDIO TRACK 1.20 4:27 min

Page 48, Exercise G

Segment 1

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Segment 2

Monks from the St. Bernard Hospice and Monastery, located in the 49-mile St. Bernard Pass between Switzerland and Italy, kept a breed of dog with an excellent sense of direction. Due to their sense of direction, the dogs were very helpful in the heavy snowstorms that were common in the area. However, the monks soon discovered that the dogs had another, equally valuable skill.

Segment 3

They were able to find people buried under the snow by avalanches. How? By using their sense of smell, estimated to be 10,000-100,000 times stronger than ours. Over the next 200 years, dogs rescued more than 2,000 people in the St. Bernard Pass.

Today, as you probably know, dogs are among the first responders to disasters. Search and rescue dogs are specially trained to find survivors buried in the rubble after a disaster. Due to innovative technology, search and rescue dogs are becoming even more effective.

The Fido Vest is one example. It has sensors on it that dogs can be trained to activate. How does it work? Well, imagine a plane crash in a mountainous area without roads. A dog wearing a Fido Vest is sent out to find survivors. When the dog finds a survivor, he activates a global positioning system, or GPS, on the vest. The sensor sends the location to his human partner, who then sends help to the site. Although the vest is still being tested, in the future it could lower the cost and improve the success of search and rescue missions in difficult to access areas.

AUDIO TRACK 1.21 2:07 min

Page 49, Exercise H

Today we're going to talk about animal heroes—that is, animals that help save human lives. Let's start with man's best friend, the dog. Dogs have been used for search and rescue since at least the 17th century, when they helped rescue lost and injured travelers in the Western Alps.

Monks from the St. Bernard Hospice and Monastery, located in the 49-mile St. Bernard Pass between Switzerland

and Italy, kept a breed of dog with an excellent sense of direction. Due to their sense of direction, the dogs were very helpful in the heavy snowstorms that were common in the area. However, the monks soon discovered that the dogs had another, equally valuable skill.

They were able to find people buried under the snow by avalanches. How? By using their sense of smell, estimated to be 10,000-100,000 times stronger than ours. Over the next 200 years, dogs rescued more than 2,000 people in the St. Bernard Pass.

Today, as you probably know, dogs are among the first responders to disasters. Search and rescue dogs are specially trained to find survivors buried in the rubble after a disaster. Due to innovative technology, search and rescue dogs are becoming even more effective.

The Fido Vest is one example. It has sensors on it that dogs can be trained to activate. How does it work? Well, imagine a plane crash in a mountainous area without roads. A dog wearing a Fido Vest is sent out to find survivors. When the dog finds a survivor, he activates a global positioning system, or GPS, on the vest. The sensor sends the location to his human partner, who then sends help to the site. Although the vest is still being tested, in the future it could lower the cost and improve the success of search and rescue missions in difficult to access areas.

AUDIO TRACK 1.22 0:27 min

Page 49, Speaking Skill: Give Reasons

Example:

Monks from the St. Bernard Hospice and Monastery, located in the 49-mile St. Bernard Pass between Switzerland and Italy, kept a breed of dog with an excellent sense of direction. These dogs were very helpful due to the heavy snowstorms that were common in the area.

AUDIO TRACK 1.23 1:23 min

Page 50, Exercise K, Communicate

Segment 1

OK, now let's move on to an unusual animal hero: the rat. Rats are used not in search and rescue, but rather to prevent deaths in areas devastated by war. During wartime, soldiers often bury small bombs underground. These bombs, called landmines, explode when stepped on. When a war is over, it is very difficult to remove all of the landmines. That's why years after a war, people continue to be killed.

Segment 2

The rats can also do it safely because, unlike humans, they do not weigh enough to set off the mines. After the rats indicate the exact locations of the mines, their human partners can safely explode them.

Segment 3

The final animal we will talk about today is the raven. Do you know the expression "bird brain"? It's used to refer to someone who's done something stupid. Because birds' brains are very small, people assumed that they were not very smart. Well, this assumption has been disproven. In fact, scientists are learning more about bird intelligence every day.

AUDIO TRACK 1.24 0:18 min

Page 50, Pronunciation Skill: Syllable Stress

Examples:

underestimate responder innovative

AUDIO TRACK 1.25 0:34 min

Page 50, Exercise M

1. access
2. activate
3. avalanche
4. devastated
5. disproven
6. sensor
7. survivor
8. wilderness

AUDIO TRACK 1.26 1:52 min

Part 2, Pages 53 and 54, Exercise D, Vocabulary

1. When I asked him to travel with me to the site of the disaster, his **initial** response was "No." However, after a few more conversations, he finally agreed to go.
2. After a snowstorm, we sometimes lose power in my town. It can take days for the power company to **restore** it.
3. Animals are often more **resilient** than humans. That is why they can recover faster from disasters and injuries.
4. After a disaster, insurance companies usually have to **process** claims from thousands of people who have lost property in the disaster.
5. If a building has **structural** problems, it could easily fall down during an earthquake.
6. The **imagery** in the movie about the hurricane was incredible. The photos of the damaged trees and houses showed just how powerful it was.
7. After a disaster, it sometimes takes a long time for a city to repair the damage to its **infrastructure** and get everything working properly again.
8. Many different types of **vehicles** are necessary during a disaster because people and goods need to be moved from one place to another.
9. It can be difficult to provide **relief** during a disaster. There are often many people who need different kinds of help, such as medical care and food.
10. If you **overwhelm** the networks, they will eventually shut down and stop working.

Unit 4

AUDIO TRACK 1.27 0:52 min

Part 1, Page 65, Exercise B, Think Critically: Predict

HOST Good afternoon. As a part of our series on our university's graduate students, Sarah Denby is here from the School of Education to talk about her research. Welcome, Sarah.

SARAH DENBY Thank you!

HOST So, could you give us an overview of your work?

SARAH Sure. I research people with unusual brains. At some point in their lives, all of them were told that they could not learn, but later became successful. And interestingly, for many of them, their success is not in spite of their so-called differences and limitations, but rather because of them.

HOST That's interesting. Could you provide some clarification by talking about someone in your study?

AUDIO TRACK 1.28 2:04 min

Pages 65 and 66, Exercise C, Vocabulary

1. We all have **limitations** that make it difficult for us to do certain things. For example, I do not have a good visual sense, so I would probably never be an artist.
2. When the interviewer did not understand something that the interviewee said, she asked for **clarification**.
3. She took her son to a doctor because of his unusual behavior. The doctor **diagnosed** him with autism, but unfortunately, at the time, there was nothing the doctor could suggest to help the child.
4. Some brain conditions stay the same; others get **progressively** worse over time.
5. Teachers do not always know how students are going to do on tests. Some good students have poorer **outcomes** than their teachers expect.
6. When the dancer injured his leg, everyone thought the injury would mean the **destruction** of his career. However, he recovered and was stronger than ever.
7. Because of her brain injury, she has difficulty with hand-eye **coordination**. She cannot move her hands quickly enough to respond to something she sees. For example, she cannot catch a ball.
8. Some animals become **paralyzed** with fear and don't move when they are frightened; others run away or attack.
9. We all pay attention to different things. Something that is easily **visible** to one person might not be noticed by another person.
10. Traveling to other countries can **transform** your ideas about the world. When you travel, you have the opportunity to learn about different places, people, and cultures.

AUDIO TRACK 1.29 4:35 min

Page 67, Exercise E, Listen for Main Ideas

HOST Good afternoon. As a part of our series on our university's graduate students, Sarah Denby is here from the School of Education to talk about her research. Welcome, Sarah.

SARAH DENBY Thank you!

HOST So, could you give us an overview of your work?

SARAH Sure. I research people with unusual brains. At some point in their lives, all of them were told that they could not learn, but later became successful. And interestingly, for many of them, their success is not in spite of their so-called differences and limitations, but rather because of them.

HOST That's interesting. Could you provide some clarification by talking about someone in your study?

SARAH Sure. Dr. Temple Grandin was diagnosed with autism in 1949 at the age of two. At that time, little was known about the condition, and people with autism were not expected to do much with their lives. After diagnosis, many ended up in institutions where they got progressively worse and eventually died.

HOST I assume that was not the outcome for Dr. Grandin?

SARAH Fortunately, no. She's a professor of Animal Science at Colorado State University and a writer. She also designs equipment to handle animals that are raised for food, such as cattle for beef. She's designed the facilities for almost half of the cattle in the United States.

HOST So how has she been so successful?

SARAH Well, Dr. Grandin is highly intelligent, as her achievements show. However, she still finds many everyday things difficult or impossible to do. For example, she is unable to remember more than three simple instructions, and she has extreme difficulty with abstract thinking. These difficulties could have meant the destruction of her dream of becoming a scientist.

HOST So how did she do it?

SARAH Her family's support was important, but scans of Dr. Grandin's brain also provide some answers. The part of her brain that controls the coordination of movement is 20% smaller than average. The area that handles short-term memory is also small. On the other hand, the side that processes visual information is unusually large. This helps explain her effective approach to thinking and learning.

HOST So what is that approach?

SARAH Dr. Grandin thinks in pictures, rather than words. For example, she can design a complex cattle facility entirely in her mind, image by image, and later draw it from memory. She says that her thinking process is similar to animals'. She believes that's one of the reasons she's so good at her work.

HOST Can you give us an example?

SARAH Sure. One time she was asked to solve a problem in a cattle processing facility. To handle a large number of cattle, you often need to get them to calmly walk in a line. In this facility, something strange kept happening. The cattle would be walking along when suddenly one of them would become paralyzed with fear and stop moving. This always happened at exactly the same place. However, nobody in the plant was able to see anything different about that spot. It was then that they contacted Dr. Grandin.

As soon as Dr. Grandin saw the facility, she identified the problem. There was a hole in the roof that let light in exactly above the spot where the cattle stopped moving. Once the hole was covered, the cattle immediately calmed down.

HOST But why was it so obvious to Dr. Grandin, when it wasn't visible to anyone else?

SARAH Because of how her brain works. When she looks at something, her mind creates an exact image of that thing and everything around it. For most people, this would be a serious problem. Our brains cannot handle all of the visual information that is constantly entering it—so we miss a lot of things. However, the visual part of Dr. Grandin's brain is so well-developed and she has learned to use it so effectively that she notices things that others miss.

In fact, Dr. Grandin believes that autistic people could solve problems that seem impossible to people with "normal" brains, if they—and we—stopped focusing so much on their disability.

HOST Fascinating! So, what do you hope to achieve through your research?

SARAH Well, I think Dr. Grandin is right. We must transform our way of looking at brain differences, and stop thinking of them as disabilities.

HOST Thank you, Sarah. Good luck with your research.

SARAH Thank you.

AUDIO TRACK 1.30 0:45 min

Page 68, Listening Skill: Recognize Repetition of Key Points

Examples:

At some point in their lives, all of them were told that they could not learn, but later became successful. And interestingly, for many of them, their success is not in spite of their so-called differences and limitations, but rather because of them.

When she looks at something, her mind creates an exact image of that thing and everything around it. For most people, this would be a serious problem. Our brains cannot handle all of the visual information that is constantly entering it—so we miss a lot of things.

AUDIO TRACK 1.31 0:34 min

Page 68, Exercise F, Listen for Details

Segment 1

SARAH Well, Dr. Grandin is highly intelligent, as her achievements show. However, she still finds many everyday things difficult or impossible to do. For example, she is unable to remember more than three simple instructions, and she has extreme difficulty with abstract thinking. These difficulties could have meant the destruction of her dream of becoming a scientist.

AUDIO TRACK 1.32 0:39 min

Pages 68 and 69, Exercise F, Listen for Details

Segment 2

SARAH Her family's support was important, but scans of Dr. Grandin's brain also provide some answers. The part of her brain that controls the coordination of movement is 20% smaller than average. The area that handles short-term memory is also small. On the other hand, the side that processes visual information is unusually large. This helps explain her effective approach to thinking and learning.

AUDIO TRACK 1.33 0:31 min

Page 70, Speaking Skill: Explain a Sequence of Events

Example:

Dr. Temple Grandin was diagnosed with autism in 1949 at the age of two. At that time, little was known about the condition, and people with autism were not expected to do much with their lives. After diagnosis, many ended up in institutions where they got progressively worse and eventually died.

AUDIO TRACK 1.34 0:26 min

Page 70, Pronunciation Skill: Pronouncing -ed endings

Examples:

talked, wished, hoped
listened, lived, stayed
shouted, needed

AUDIO TRACK 1.35 0:41 min

Page 71, Exercise I

1. asked
2. identified
3. happened
4. paralyzed
5. diagnosed
6. transformed
7. expected

8. covered
9. contacted
10. developed

AUDIO TRACK 1.36 0:53 min

Page 71, Exercise J

SARAH One time she was asked to solve a problem in a cattle processing facility. To handle a large number of cattle, you often need to get them to calmly walk in a line. In this facility, something strange kept happening. The cattle would be walking along when suddenly one of them would become paralyzed with fear and stop moving. This always happened at exactly the same place. However, nobody in the plant was able to see anything different about that spot. It was then that they contacted Dr. Grandin.

As soon as Dr. Grandin saw the facility, she identified the problem. There was a hole in the roof that let light in exactly above the spot where the cattle stopped moving. Once the hole was covered, the cattle immediately calmed down.

AUDIO TRACK 1.37 2:30 min

Part 2, Page 75, Exercise D, Vocabulary

1. After many years of drawing, Hansen developed a shake in his hand. When his hand shook, he tried to **compensate** by holding the pen more tightly. This didn't help. In fact, it made things worse.
2. The shake in Hansen's hand was so bad that he couldn't draw a straight line. **Ultimately** he had to find new ways to make art.
3. "And more importantly, once I embraced the shake, I realized I could still make art. I just had to find a different **approach** to making the art that I wanted."
4. In his art, Hansen likes to **fragment** images. When you look at the image up close, you see individual dots of ink. But when you look at the image from farther away, you see that the dots make up an entire image, for example a face.
5. "This was the first time I'd **encountered** this idea that embracing a limitation could actually drive creativity."
6. He didn't even have the basic things that most artists have to work with, so when he got a job and his first paycheck, he was excited to finally be able to buy the **supplies** he needed.
7. "And I was in a dark place for a long time, unable to create. And it didn't make any sense, because I was finally able to support my art, and yet I was creatively **blank**."
8. "Or what if instead of making art to **display**, I had to destroy it?"
9. To an artist, creativity is an important **resource**.
10. "Learning to be creative within the confines of our limitations is the best hope we have to transform ourselves and, **collectively**, transform our world."

Unit 5

AUDIO TRACK 2.2 1:33 min

Part 1, Page 85, Exercise C, Vocabulary

- a. Most people get headaches from time to time, but if you suffer from **chronic** headaches, you should probably see a doctor. It is not normal to have a headache every day.

b. Having a baby is stressful both emotionally and physically. Fortunately, there is a **mechanism** in women's bodies to help them deal with the stress. After the baby is born, the mother's brain **releases** a hormone called oxytocin. Oxytocin **strengthens** the new mother's emotional connection to her baby so that she will be more likely to keep the baby safe.

- c. Firefighters have stressful jobs. They have to face danger and remain calm. They must learn to control their emotions in a **crisis**.
- d. If you eat too much and never walk anywhere or exercise your **muscles**, your body will **inevitably** become weak and you will gain weight. There is no other possibility.
- e. Research has **revealed** that stress can **be associated** with serious health problems. For example, people under a lot of stress are more likely to have higher blood pressure and more heart attacks than people with less stress. Stress can also cause depression. To **enhance** your quality of life, you should learn healthy ways to manage stress.

AUDIO TRACK 2.3 4:49 min

Pages 86 and 87, Exercise E, Listen for Main Ideas

PROFESSOR Our topic today is the effects of stress on the body. These effects can be positive or negative. First, you need to understand the two types of stress: acute and chronic.

You experience acute stress when you are in physical danger. Acute stress lasts only a short time, just until the danger is gone.

For example, imagine you're walking home when a big scary dog jumps out at you. What happens? You're suddenly full of energy, ready to run away or fight. This is called the "fight or flight" reaction. Where does all that energy come from? It starts with your brain releasing the powerful stress hormones adrenaline and cortisol. These hormones act on the systems in your body that can give you immediate energy. This strengthens your body and enhances your reaction time. Suddenly, you feel like Superman.

Your heart starts to beat faster, and your blood pressure goes up. Your breathing rate also increases to get more oxygen to your brain and muscles. Your muscles tense up, and you are able to run faster than you've ever run. After you're safe, your brain stops releasing stress hormones, and you lose your special powers. Superman is gone, but so is the big scary dog.

That's acute stress. It's your body's natural reaction to a crisis, and it's not at all harmful. In fact, it can save your life.

Chronic stress is a completely different story. At first, however, it looks and feels exactly like acute stress. The body's stress response is the same—you get all the same special powers—but the problem is that the brain doesn't stop releasing the stress hormones. As a result, your blood pressure and breathing rate remain high, and your muscles don't relax. That's a big problem. Even Superman cannot stay Superman forever! So, the difference between acute and chronic stress is in how long the stress reaction lasts. And being stressed for a long time, rather than saving you, can actually kill you.

So, why does the brain keep releasing stress hormones after the danger is gone? The reason is that the danger is not gone. To explain this, I need to go back in time, thousands of years. At that time, most of the dangers humans faced were physical, like wild animals and storms.

And the crisis didn't last long; inevitably, you either escaped or died.

These days, however, we rarely have to face a wild animal, and we can usually predict and avoid bad storms. So, where's the danger? It's often in our minds. Nowadays, our stress tends to be caused by psychological fear or worry about the future, not physical danger. For example, we may worry that we'll lose our job and not be able to support our family. And that future feels like a dangerous place. Of course we can't escape that kind of danger with our "special powers." Unfortunately, our bodies cannot always tell the difference between that fear and a present danger. So, sometimes, when we're afraid of losing our job, our bodies react as if a lion were chasing us. Why? Because our body's stress mechanism is the same as it was thousands of years ago. The problem is that the fear of losing a job can last a long time. This leads to chronic stress, which is associated with some serious health problems.

One of the most obvious examples is cardiovascular, or heart, disease. Your heart is a muscle. Stress hormones make it beat very fast. This is not a problem over the short term. However, over time, the muscles of your heart will become thicker from all that beating, and your blood pressure will remain high. This combination of thicker heart muscles and high blood pressure increases your risk of heart disease.

The effects of chronic stress on the heart are the easiest to explain, but every day research reveals other parts of the body that are affected. Next week we'll talk about how chronic stress can affect the brain, the stomach, and the muscles.

AUDIO TRACK 2.4 0:49 min

Page 87, Listening Skill: Listen for Cause and Effect

Examples:

As a result, your blood pressure and breathing rate remain high, and your muscles don't relax.

Nowadays, our stress tends to be caused by psychological fear or worry about the future, not physical danger

This leads to chronic stress . . .

Next week we will talk about how chronic stress can affect the brain, the stomach, and the muscles.

The effects of chronic stress on the heart are the easiest to explain.

AUDIO TRACK 2.5 2:31 min

Page 88, Exercise F, Listen for Details

Segment 1

Our topic today is the effects of stress on the body. These effects can be positive or negative. First, you need to understand the two types of stress: acute and chronic.

You experience acute stress when you are in physical danger. Acute stress lasts only a short time, just until the danger is gone.

For example, imagine you're walking home when a big scary dog jumps out at you. What happens? You are suddenly full of energy, ready to run away or fight. This is called the "fight or flight" reaction. Where does all that energy come from? It starts with your brain releasing the powerful stress hormones adrenaline and cortisol. These hormones act on the systems in your body that can give you immediate energy. This strengthens your body and enhances your reaction time.

Suddenly, you feel like Superman! Your heart starts to beat faster, and your blood pressure goes up. Your breathing rate also increases to get more oxygen to your brain and your muscles. Your muscles tense up, and you are able to run faster than you've ever run. After you're safe, your brain stops releasing stress hormones, and you lose your special powers. Superman is gone, but so is the big scary dog.

That's acute stress. It is your body's natural reaction to a crisis, and it is not at all harmful. In fact, it can save your life.

Segment 2

Chronic stress is a completely different story. At first, however, it looks and feels exactly like acute stress. The body's stress response is the same—you get all the same special powers—but the problem is that the brain doesn't stop releasing the stress hormones. As a result, your blood pressure and breathing rate remain high, and your muscles don't relax. That is a big problem. Even Superman cannot stay Superman forever! So, the difference between acute and chronic stress is in how long the stress reaction lasts. And being stressed for a long time, rather than saving you, can actually kill you.

AUDIO TRACK 2.6 0:22 min

Page 92, Pronunciation Skill: Thought Groups

Example:

You experience acute stress when you are in physical danger.

Acute stress lasts only a short time, just until the danger is gone.

AUDIO TRACK 2.7 0:37 min

Page 92, Exercises K and L

1. For example, imagine you're walking home when a big scary dog jumps out at you. What happens?
2. You are suddenly full of energy, ready to run away or fight. This is called the "fight or flight" reaction.
3. Where does all that energy come from? It starts with your brain releasing the powerful stress hormones adrenaline and cortisol.

AUDIO TRACK 2.8 1:53 min

Part 2, Pages 94 and 95, Exercise C, Vocabulary

1. Keeping a secret can be very stressful. For years I didn't tell my wife that I had lost money in a bad business deal. As soon as I made a **confession** about what I had done, I felt so much better.
2. You need to take care of yourself. If you **are not willing** to reduce your stress levels, eat a healthy diet, and exercise every day, you will never get better. To **heal**, your body needs all of these things.
3. Teaching can be stressful, but it can also be rewarding. When students are successful, it **motivates** the teacher. Their success makes the teacher want to work even harder.
4. She is a great doctor. She cares deeply about her patients, and is always very **compassionate**. In turn, her patients show their **appreciation** by sending her thank you cards.
5. It takes **courage** to be a good police officer. The police have to face danger every day and remain strong and calm. Good police officers also need to have **empathy**. They need to be able to understand all different types

of people and their problems—even people who are very different from them. Finally, good police officers need **resilience**. They need to be able to face stressful situations day after day and stay strong, both emotionally and physically.

6. After my best friend lost his job, I had to ask him how he was dealing with the stress of being unemployed. I did not have **access** to his mind to know his thoughts and feelings.

Unit 6

AUDIO TRACK 2.9 2:01 min

Part 1, Page 105, Exercise C, Vocabulary

- a. There was a **massive** oil spill in the Gulf of Mexico. It was one of the largest environmental disasters in history.
- b. Some kinds of shellfish are able to **cement** themselves to hard objects, such as rocks and the bottoms of boats. It's very difficult to remove them.
- c. That movie was **instrumental** in getting the public to pay attention to the issue of global warming. Before then, nobody seemed to know or care about the issue.
- d. Some animals can survive in a variety of **habitats**, but others can live in only one very specific kind of place.
- e. There are many different **species** of fish, of all different colors, shapes, and sizes.
- f. Coral can survive a certain amount of pollution, but they won't **thrive**. They will be unhealthy and will eventually start to die.
- g. The **preservation** of our planet is everyone's responsibility. If we do not work together, we will destroy the environment and our children's future.
- h. I believe that life is **precious**. That is why I teach my children to respect all living things.
- i. The coral is extremely **fragile**. When you are swimming, be careful not to touch it with your hands or feet. Just a slight touch can damage or even kill it.
- j. Before they put up the **barrier**, the river used to flood the road every time it rained. Now it only floods when it rains unusually hard for several days.

AUDIO TRACK 2.10 6:43 min

Page 106, Exercise E, Listen for Main Ideas

TEACHING ASSISTANT (TA) OK folks . . . Lots of exciting stuff today! Our topic involves an amazing critter. I know, you've heard that before. What can I say? There are lots of them! Seriously, though, this critter is really special. You did the reading? Of course you did. So, today's discussion: the importance of coral reefs to the health of both the oceans and the world economy.

But first let's talk about today's critter—coral—and how, if conditions are right, it grows up to be part of a massive extended family. OK, who can explain what coral is? And how coral reefs are formed? Brian's not looking at me, so he must have the answer . . .

BRIAN . . . um . . . just a sec...OK, got it. First of all, there are different types of coral. The coral that form most reefs are as hard as a rock—but they're really animals. One individual piece of coral is called a coral polyp. Coral polyps float in the water and attach themselves to hard surfaces. That surface, if it's in the right location, becomes their home. Coral polyps release a chemical, calcium carbonate, that becomes their hard skeleton,

like our bones. Calcium carbonate also cements polyps together—forming a coral reef.

TA Great job, Brian! That coral reef is almost like an extended family. But unlike most of the families I know, coral live on top of the "bones" of their dead ancestors. The oldest coral reefs have been around for 50 million years. The largest one, which forms the Great Barrier Reef in Australia, is massive—230 kilometers long. Pretty amazing.

OK, so let's talk about coral reefs and the ocean. What makes reefs so instrumental to ocean health?

DIEGO They provide habitats for lots of species.

TA Good . . . but can you link that idea directly to ocean health?

DIEGO Sorry, I'm not following you.

TA Let me put it another way—What happens if you take away a species' habitat?

DIEGO Oh . . . I see. They can't thrive—in fact, many of them won't even survive.

TA That's right . . . when a coral reef dies, massive numbers of marine plants and animals die, too. Why? Because 25% of all ocean species depend on reefs for food and shelter. 25%! But listen to this—coral reefs cover less than 2% of the ocean's bottom. Just think about that—25% of marine species depend on something that only covers less than 2% of the ocean floor. So, you see how instrumental reef preservation is to ocean health? OK, now let's talk about what's happening to the reefs. Why do they need preservation? Terry?

TERRY About 20% are badly damaged and can't recover.

TA And the rest?

TERRY About one half are at risk, but can be saved.

TA A pretty big problem, right? So why is this precious resource dying?

CARL We're the problem.

TA Can you be just a little more specific?

CARL Sure . . . pollution, overfishing, global warming . . . they're destroying the reefs, and they're all manmade problems.

TA Very good. Remember what Brian told us? Coral are animals, not rocks—fragile animals affected by pollution and changes in water temperature due to global warming . . . Yes, Terry?

TERRY I get pollution and global warming, but overfishing?

TA Susan? You want to take that question?

SUSAN Sure. Certain fish and shellfish protect coral reefs—they eat fish that eat coral and a species of seaweed that covers the coral and can kill it. If fishermen catch too many of them, they can't protect the reef anymore.

TA Exactly. And what's that relationship—between the coral reefs and their protectors—called? Carl?

CARL Mutualism?

TA Bingo.

BOB Sorry, I didn't catch that. Could you repeat it?

CARL Mutualism—two species helping each other.

BOB Oh yeah, mutualism. Got it.

TA OK, good. So, Terry, how're you doing? Do you see how overfishing harms reefs?

TERRY Yes, thanks.

TA Excellent. So we've talked about reefs as habitats for marine life, but what other roles do they play? Haya?

HAYA Sorry, I'm not sure I understand the question.

TA Let me clarify. Reefs are important to marine life, but how are they important to human life?

HAYA Oh, now I get it. You're talking about the fishing industry, right? When a reef dies, the fish around it disappear too, so fishermen lose their jobs—and the people who eat the fish are also affected.

TA Yup. In fact, more than 500 million people depend on coral reefs for food or work. Did you catch that? 500 million! But incredibly, coral reefs do even more for humans. How else do they help us?

BRIAN They protect the shoreline?

TA How?

DAN Large reefs provide a natural barrier between the ocean and the coast. When there's a bad storm, they prevent or reduce the amount of damage to land.

TA Exactly. But we're still not done with what reefs do for us. What other industry depends on coral reefs?

CARL Tourism. Lots of tourists visit coral reefs to go snorkeling and scuba diving.

TA Great . . . but we're not done yet. Daniella?

DANIELLA Coral reefs contribute to scientific research. For example, new medicines for cancer and HIV have been developed from plants and animals living on coral reefs.

TA That's right . . . So, do you see how the preservation of coral reefs is an important economic issue? Healthy reefs contribute between 30 and 172 billion dollars every year to the world's economy—through the fishing, tourism, and medical research industries, and by reducing damage from natural disasters. Next, we are . . .

AUDIO TRACK 2.11 5:00 min

Page 107, Exercise F, Listen for Details

TEACHING ASSISTANT (TA) OK folks . . . Lots of exciting stuff today! Our topic involves an amazing critter. I know, you've heard that before. What can I say? There are lots of them! Seriously, though, this critter is really special. You did the reading? Of course you did. So, today's discussion: the importance of coral reefs to the health of both the oceans and the world economy.

But first let's talk about today's critter—coral—and how, if conditions are right, it grows up to be part of a massive extended family. OK, who can explain what coral is? And how coral reefs are formed? Brian's not looking at me, so he must have the answer . . .

BRIAN . . . um . . . just a sec . . . OK, got it. First of all, there are different types of coral. The coral that form most reefs are as hard as a rock—but they're really animals. One individual piece of coral is called a coral polyp. Coral polyps float in the water and attach themselves to hard surfaces. That surface, if it's in the right location, becomes their home. Coral polyps release a chemical, calcium carbonate, that becomes their hard skeleton, like our bones. Calcium carbonate also cements polyps together—forming a coral reef.

TA Great job, Brian! That coral reef is almost like an extended family. But unlike most of the families I know, coral live on top of the “bones” of their dead ancestors. The oldest coral reefs have been around for 50 million years. The largest one, which forms the Great Barrier Reef in Australia, is massive—230 kilometers long. Pretty amazing.

OK, so let's talk about coral reefs and the ocean. What makes reefs so instrumental to ocean health?

DIEGO They provide habitats for lots of species.

TA Good . . . but can you link that idea directly to ocean health?

DIEGO Sorry, I'm not following you.

TA Let me put it another way—What happens if you take away a species' habitat?

DIEGO Oh . . . I see. They can't thrive—in fact, many of them won't even survive.

TA That's right . . . when a coral reef dies, massive numbers of marine plants and animals die, too. Why? Because 25% of all ocean species depend on reefs for food and shelter. 25%! But listen to this—coral reefs cover less than 2% of the ocean's bottom. Just think about that—25% of marine species depend on something that only covers less than 2% of the ocean floor. So, you see how instrumental reef preservation is to ocean health? OK, now let's talk about what's happening to the reefs. Why do they need preservation? Terry?

TERRY About 20% are badly damaged and can't recover.

TA And the rest?

TERRY About one half are at risk, but can be saved.

TA A pretty big problem, right? So why is this precious resource dying?

CARL We're the problem.

TA Can you be just a little more specific?

CARL Sure . . . pollution, overfishing, global warming . . . they're destroying the reefs, and they're all manmade problems.

TA Very good. Remember what Brian told us? Coral are animals, not rocks—fragile animals affected by pollution and changes in water temperature due to global warming . . . Yes, Terry?

TERRY I get pollution and global warming, but overfishing?

TA Susan? You want to take that question?

SUSAN Sure. Certain fish and shellfish protect coral reefs—they eat fish that eat coral and a species of seaweed that covers the coral and can kill it. If fishermen catch too many of them, they can't protect the reef anymore.

TA Exactly. And what's that relationship—between the coral reefs and their protectors—called? Carl?

CARL Mutualism?

TA Bingo.

BOB Sorry, I didn't catch that. Could you repeat it?

CARL Mutualism—two species helping each other.

BOB Oh yeah, mutualism. Got it.

TA OK, good. So, Terry, how're you doing? Do you see how overfishing harms reefs?

TERRY Yes, thanks.

AUDIO TRACK 2.12 1:43 min

Page 107, Note-Taking Skill: Rewrite Your Notes in Outline Form

Example:

TA But first let's talk about today's critter—coral—and how, if conditions are right, it grows up to be part of a massive extended family. OK, who can explain what coral is? And how coral reefs are formed? Brian's not looking at me, so he must have the answer . . .

BRIAN . . . um . . . just a sec . . . OK, got it. First of all, there are different types of coral. The coral that form most reefs are as hard as a rock—but they're really animals. One individual piece of coral is called a coral polyp.

Coral polyps float in the water and attach themselves to hard surfaces. That surface, if it's in the right location, becomes their home. Coral polyps release a chemical, calcium carbonate, that becomes their hard skeleton, like our bones. Calcium carbonate also cements polyps together—forming a coral reef.

TA Great job, Brian! That coral reef is almost like an extended family. But unlike most of the families I know, coral live on top of the “bones” of their dead ancestors. The oldest coral reefs have been around for 50 million years. The largest one, which forms the Great Barrier Reef in Australia, is massive—230 kilometers long. Pretty amazing.

AUDIO TRACK 2.13 1:53 min

Page 108, Exercise G, Listen and Take Notes

TA So we've talked about reefs as habitats for marine life, but what other roles do they play? Haya?

HAYA Sorry, I'm not sure I understand the question.

TA Let me clarify. Reefs are important to marine life, but how are they important to human life?

HAYA Oh, now I get it. You're talking about the fishing industry, right? When a reef dies, the fish around it disappear too, so fishermen lose their jobs—and the people who eat the fish are also affected.

TA Yup. In fact, more than 500 million people depend on coral reefs for food or work. Did you catch that? 500 million! But incredibly, coral reefs do even more for humans. How else do they help us?

DAN They protect the shoreline?

TA How?

DAN Large reefs provide a natural barrier between the ocean and the coast. When there's a bad storm, they prevent or reduce the amount of damage to land.

TA Exactly. But we're still not done with what reefs do for us. What other industry depends on coral reefs?

CARL Tourism. Lots of tourists visit coral reefs to go snorkeling and scuba diving.

TA Great . . . but we're not done yet. Daniella?

DANIELLA Coral reefs contribute to scientific research. For example, new medicines for cancer and HIV have been developed from plants and animals living on coral reefs.

TA That's right . . . So, do you see how the preservation of coral reefs is an important economic issue? Healthy reefs contribute between 30 and 172 billion dollars every year to the world's economy—through the fishing, tourism, and medical research industries, and by reducing damage from natural disasters. Next, we are . . .

AUDIO TRACK 2.14 0:20 min

Page 109, Listening Skill: Recognize Linking

Example:

Let me put it another way. What happens if you take away a species' habitat?

They can't thrive. In fact, many of them won't even survive.

AUDIO TRACK 2.15 0:33 min

Page 109, Exercise I

TA What makes reefs so instrumental to ocean health?

DIEGO They provide habitats for lots of species.

TA Good . . . but can you link that idea directly to ocean health?

AUDIO TRACK 2.16 1:04 min

Page 109, Exercise J

1. OK, now let's talk about what's happening to the reefs.
2. About 20% are badly damaged and can't recover.
3. About one half are at risk, but can be saved.

AUDIO TRACK 2.17 0:23 min

Page 112, Pronunciation Skill: Intonation in Questions

Examples:

What happens if you take away a species' habitat?

How?

Has everyone got it?

They protect the shoreline?

AUDIO TRACK 2.18 0:22 min

Page 112, Exercise N

1. OK, who can explain what coral is?
2. Do you see how overfishing harms reefs?
3. You want to take that question?

AUDIO TRACK 2.19 1:50 min

Part 2, Page 115, Exercise E, Vocabulary

1. “As soon as we **submerge** the sculptures, they're not ours anymore, because as soon as we sink them, the sculptures, they belong to the sea.”
2. Jason deCaires Taylor uses materials and designs that create a **stable** environment for sea plants and animals to grow on and thrive.
3. Jason deCaires Taylor creates **textured** surfaces on his sculptures so that sea life can easily attach to them.
4. The ocean **currents** move coral polyps from the natural reefs to the underwater sculptures, where they can attach themselves and live.
5. “Since building these sites, we've seen some **phenomenal** and unexpected results.”
6. “The sculpture park in Grenada was instrumental in the government **designating** a spot a marine-protected area.”
7. “When we see these incredible places and things . . . we do our best to **cherish** them, to protect them and to keep them safe.”
8. “[The ocean is] simply too massive, too **vast**, too endless . . . I think most people actually look past to the **horizon**.”
9. “I hope that by bringing our art into the ocean, . . . we are also giving something back, and by encouraging new environments to thrive, and . . . opening up a new . . . way of seeing the seas: as . . . precious places, **worthy of** our protection.”

Unit 7

AUDIO TRACK 2.20 0:52 min

Part 1, Page 124, Exercise B, Think Critically: Predict

HOST DIANA JENSEN (DJ) Welcome to today's roundtable! Our subject is how the Internet impacts reading habits and comprehension. Please join me in welcoming our guests: James Hall, a reporter on technology in education; Melanie White from the Hillside Parents' Association; Pedro Martinez, a history teacher; and Katie Wang, a high

school senior—Katie is a gifted student, at the top of her class of 500; and I'm your host, Diana Jensen.

AUDIO TRACK 2.21 1:50 min

Page 125, Exercise C, Vocabulary

- a. Computers have **impacted** our lives in many ways. Life today is completely different than it was 50 years ago, and many of the changes are due to computers.
- b. My daughter is academically **gifted**. She was able to graduate from high school three years early, and started university when she was only 15.
- c. The Internet has existed for a few **decades**, but most people didn't start to use it until about 25 years ago.
- d. If I need to concentrate on something for an **extended** period of time, I need to turn off all of my electronic devices and go somewhere quiet.
- e. At first I was not convinced that the Internet was a good thing, but **on balance** I've decided that it has done more good than harm.
- f. **There is no doubt** that both teaching and learning have been affected by the Internet.
- g. That is completely **absurd**! You don't know what you are talking about. How could a computer be more intelligent than a human being?
- h. Cell phones become **outdated** very quickly. I replace mine every two years.
- i. No matter how old they are, teachers should be **up-to-date** on the latest technology.
- j. My grandmother never lost her sense of **wonder** about the world. She was always curious and young at heart.

AUDIO TRACK 2.22 4:24 min

Page 126, Exercise E, Listen for Main Ideas and Exercise F

HOST DIANA JENSEN (DJ) Welcome to today's roundtable! Our subject is how the Internet impacts reading habits and comprehension. Please join me in welcoming our guests: James Hall, a reporter on technology in education; Melanie White from the Hillside Parents' Association; Pedro Martinez, a history teacher; and Katie Wang, a high school senior—Katie is a gifted student, at the top of her class of 500; and I'm your host, Diana Jensen.

James, could you briefly explain what the research shows? Is the Internet making us stupid, as some experts claim? And more to the point, is it making us bad readers?

JAMES HALL Well, as I'm sure you know, the research is still in its early stages. The Internet has only existed for a few decades, while reading goes back thousands of years. But one thing is clear: the Internet is changing the way we read . . . and the way we read changes our brain structure.

DJ That sounds pretty scary.

JAMES A lot of people react that way but that's the wrong way to think about it. Everything we do affects the brain—exercise, food, whether we speak more than one language . . . the list is infinite. So it shouldn't be surprising or scary that the way we read affects the brain. That said, research suggests that the Internet impacts our ability to concentrate on one thing over an extended period of time, say 30 minutes. This makes "deep reading"—that is, concentrated reading, not just skimming quickly for information—more difficult. But there are many experts who believe that on balance,

the impact is positive; the key seems to be information. On the Internet, we can immediately access more information than ever before, and we need to read to get that information—it's just a different kind of reading.

PEDRO MARTINEZ I have to break in here. There is no doubt in my mind that the Internet is turning our children into non-readers. I see it every day in the classroom, and it is scary.

DJ What do you see? And why does it scare you?

PEDRO I see kids who can't concentrate long enough to read even one paragraph. I see kids who can't remember anything . . . and don't think that's a problem! They ask me, "Why do I need to remember that? I can just look it up on the Internet." It's absurd.

JAMES Can I . . .

DJ Let's give Katie a chance to comment. Katie, do you use the Internet a lot? And are you a reader?

KATIE WANG Yes, of course I use the Internet. And I read all the time; I just don't usually read books—books get outdated really fast these days. Instead, I read articles with the most up-to-date information. And reading on the Internet is fun—I can read and watch videos related to what I'm learning. Also, because I'm a visual learner, videos and pictures help me learn. I can't imagine what it would be like to read any other way.

MELANIE WHITE But what are you going to do when you have to read something long and difficult . . . with no pictures, no Internet . . . ? The way you describe reading is not deep reading, it's skimming—like a swimmer who just swims along the surface of the water, and never looks down—so you miss the wonder below you—the colorful fish, the sea plants, the beauty of it all—but also the dangers—maybe there's a shark down there! And you're missing it all! I'm sorry, I guess I'm more emotional about this than I realized. It's just that I worry so much for your generation, for my sons . . . Reading is such an important part of my life, but I can't get them to even open a book . . .

JAMES Yes, but Katie does read; in fact, she reads a lot, and really enjoys it. She just doesn't read the same way that you do. So she's not a non-reader; she's a different kind of reader. And that isn't necessarily bad.

DJ Well, this is a lively discussion. We have to take a short break, but we'll be right back . . .

AUDIO TRACK 2.23 0:47 min

Page 127, Note-Taking Skill: Use a T-Chart to Take Notes

JAMES That said, research suggests that the Internet impacts our ability to concentrate on one thing over an extended period of time, say 30 minutes. This makes "deep reading"—that is, concentrated reading, not just skimming quickly for information—more difficult. But there are many experts who believe that on balance, the impact is positive; the key seems to be information. On the Internet, we can immediately access more information than ever before, and we need to read to get that information—it's just a different kind of reading.

AUDIO TRACK 2.24 1:14 min

Page 127, Exercise G, Listen for Details

PEDRO I have to break in here. There is no doubt in my mind that the Internet is turning our children into non-readers. I see it every day in the classroom, and it is scary.

DJ What do you see? And why does it scare you?

PEDRO I see kids who can't concentrate long enough to read even one paragraph. I see kids who can't remember anything . . . and don't think that's a problem! They ask me, "Why do I need to remember that? I can just look it up on the Internet." It's absurd.

JAMES Can I . . .

DJ Let's give Katie a chance to comment. Katie, do you use the Internet a lot? And are you a reader?

KATIE Yes, of course I use the Internet. And I read all the time; I just don't usually read books—books get outdated really fast these days. Instead, I read articles with the most up-to-date information. And reading on the Internet is fun—I can read and watch videos related to what I'm learning. Also, because I'm a visual learner, videos and pictures help me learn. I can't imagine what it would be like to read any other way.

AUDIO TRACK 2.25 0:22 min

Page 128, Listening Skill: Recognize a Speaker's Tone

Example:

Welcome to today's roundtable! Our subject is how the Internet impacts reading habits and comprehension. Please join me in welcoming our guests.

AUDIO TRACK 2.26 1:01 min

Page 128, Exercises H and I

Segment 1

PEDRO They ask me, "Why do I need to remember that? I can just look it up on the Internet." It's absurd.

Segment 2

KATIE Also, because I'm a visual learner, videos and pictures help me learn.

Segment 3

MELANIE It's just that I worry so much for your generation, for my sons . . . Reading is such an important part of my life, but I can't get them to even open a book.

Segment 4

JAMES Yes, but Katie does read; in fact, she reads a lot, and really enjoys it. She just doesn't read the same way that you do. So she's not a non-reader; she's a different kind of reader. And that isn't necessarily bad.

AUDIO TRACK 2.27 0:28 min

Page 130, Speaking Skill: Defend a Position

Example:

Everything we do affects the brain—exercise, food, whether we speak more than one language . . . the list is infinite. So it shouldn't be surprising or scary that the way we read affects the brain.

AUDIO TRACK 2.28 0:21 min

Page 130, Pronunciation Skill: Stress Key Words

And reading on the Internet is fun—I can read and watch videos related to what I'm learning. Also, because I'm a visual learner, the videos and pictures help me learn.

AUDIO TRACK 2.29 0:27 min

Page 130, Exercise L

JAMES That said, research suggests that the Internet impacts our ability to concentrate on one thing over an

extended period of time, say 30 minutes. This makes "deep reading"—that is, concentrated reading, not just skimming quickly for information—more difficult.

AUDIO TRACK 2.30 1:58 min

Part 2, Page 136, Exercise D, Vocabulary

1. All of the classrooms in my son's school look **identical**. The walls are painted yellow and the teacher's desk is at the front of the room.
2. The economy in this part of the country is **robust**. Most people have jobs.
3. He thinks that schools today are **obsolete**. He thinks they should be replaced by schools that are better suited to today's world.
4. All public schools must meet the performance **standards** established by the local government. For example, all children must learn to read by the end of the third grade.
5. My **hypothesis** was that students could teach themselves if they had access to computers. The results of my first experiment suggest that my **hypothesis** is correct, but I need to collect more data.
6. There are very good **pedagogical** reasons for using computers in the classroom. One of the most important is that computers motivate students to learn.
7. Right now, children in wealthy school districts have the best teachers and resources. The government should **level the playing field** to enable poorer students to receive the same education as richer students.
8. As a result of hours of discussion among experts, a solution finally **emerged**.
9. Children learn best when they **tap into** their own creativity. Then they learn naturally, with very little help.
10. The **facilities** at our new school are incredible. There's a gym with a pool, several computer labs with the latest technology, and a new cafeteria.

Unit 8

AUDIO TRACK 2.31 1:28 min

Part 1, Page 144, Exercise B, Think Critically: Predict

PROFESSOR Good afternoon. To start today's class, I have some questions for you.

First, have you ever done a "Do it yourself," or DIY project? Even a simple one like assembling a piece of furniture? So . . . more than half of you.

Next question: Do you watch a DIY program? You know, those shows where people rebuild their house over a weekend? OK, about three quarters of you.

Finally, have you ever bought something from a website where you can design your own product, for example sneakers, jeans, or cell-phone cover? Hmm, so a lot of you have done that too.

So, would you agree that DIY is pretty popular these days?

In fact, DIY has become incredibly popular. And businesses, who have already made a lot of money from DIY, see the potential for making even more—but only if they can maintain the interest of consumers. To find out if the current popularity of DIY products is sustainable, businesses hope to understand the psychology behind DIY—which is the subject of today's lecture.

AUDIO TRACK 2.32 2:00 min

Page 145, Exercise C, Vocabulary

1. The table I bought was cheap, but I had to **assemble** it myself. The instructions were terrible. It took me hours!
2. Many business people saw the **potential** for making money with DIY products, so they started to develop products that people could make themselves.
3. Despite the slow economy, the sales of our DIY projects have been very good this month. We hope to **maintain** or even increase sales next month.
4. Some **consumers** buy furniture that they need to put together themselves because it's cheaper.
5. More and more businesses are beginning to reduce their dependence on oil, because it is not a **sustainable** source of energy. Instead, they are beginning to invest in forms of energy that will always be available, such as wind and solar.
6. My brother likes to do projects in his free time. I've never seen him sit down and just watch television. He doesn't like to be **idle**.
7. The researchers are looking for people to be in their study. **Participants** have to be over the age of 21.
8. There are two **versions** of the instructions. One is in English, and the other is in Spanish.
9. I bought a beautiful old table from someone on the internet for \$100. I took it to an antique dealer and he **valued** it at \$1,000. Do you think I should keep it?
10. Think about the business **implications** of the results of the study. Do you think that business owners will change anything based on the research?

AUDIO TRACK 2.33 0:24 min

Page 146, Listening Skill: Understand Content-Rich Material

Now for the second study, which involved origami. Origami is the Japanese art of folding paper into different shapes, often of animals, such as birds, fish, or insects.

AUDIO TRACK 2.34 7:39 min

Pages 146 and 147, Exercise E, Listen for Main Ideas

PROFESSOR Good afternoon. To start today's class, I have some questions for you.

First, have you ever done a "Do It Yourself," or DIY project? Even a simple one like assembling a piece of furniture? So . . . more than half of you.

Next question: Do you watch a DIY program? You know, those shows where people rebuild their house over a weekend? OK, about three quarters of you.

Finally, have you ever bought something from a website where you can design your own product, for example sneakers, jeans, or cell-phone cover? Hmm, so a lot of you have done that, too.

So, would you agree that DIY is pretty popular these days?

In fact, DIY has become incredibly popular. And businesses, who have already made a lot of money from DIY, see the potential for making even more—but only if they can maintain the interest of consumers. To find out if the current popularity of DIY products is sustainable, businesses hope to understand the psychology behind DIY—which is the subject of today's lecture.

Let's start with two research studies. The first study, done by business schools at one U.S. and one Chinese university,

is about the link between busyness and happiness. Here's their first hypothesis: People are happier when they are busy than when they are idle.

Now, the second hypothesis: People will choose busyness over idleness, but only if they see a reason to be busy. The reason doesn't have to be serious; they just need to have a reason. But without a reason, they will do nothing.

So . . . the first experiment involved a kind of DIY project with a bracelet.

First, the researchers divided the participants into two groups.

Second, they put each participant in a separate room with a bracelet in it. They didn't let them bring anything into the room—no cell phones, books, or paper.

All of the bracelets were identical and easy to take apart and put back together.

Next, they told the participants to stay in the room for 15 minutes.

Then they gave each participant a choice. They could do nothing for 15 minutes—or they could take the bracelet apart and put it back together again.

At that point in the experiment, the researchers gave each group a different version of the instructions.

If participants in group one took the bracelet apart, they had to put it back together in exactly the same way.

If participants in group two took the bracelet apart, they had to assemble it in a different way, by following instructions for a new design. Got that?

OK. Then the researchers left the participants alone for 15 minutes.

The results?

Most participants in group one did nothing. In contrast, most of the participants in group 2 worked on the bracelet. And interestingly, the participants from both groups who worked on the bracelet felt happier than those who did nothing.

So, the first hypothesis: People are happier when they are busy than when they are idle. Do the results support it? Yes?

FEMALE STUDENT Absolutely . . . the participants who worked on the bracelet were busy and happier.

PROFESSOR Good . . . so now the second hypothesis: People will choose being busy over doing nothing, but only if they can see a reason for being busy.

So, do the results support this? Anyone? Go ahead.

MALE STUDENT 1 Yeah, for sure. The ones with a reason worked on the bracelet. The ones without a reason did nothing.

PROFESSOR And why did they work on it?

MALE STUDENT 2 To change the design.

PROFESSOR OK, good. So now we have one possible reason why DIY projects are popular: they give people a reason to be busy.

Now for the second study, which involved origami. Origami is the Japanese art of folding paper into different shapes, often of animals, such as birds, fish, or insects. Origami experts are true artists, but anyone can follow instructions to make simple origami.

In the experiment, the participants, who were not experts, made origami frogs. Next, they were asked to value their frogs. Finally, they had to value the frogs made by experts. The results?

They valued their own frogs either the same or higher than the frogs made by experts . . . and they were sure that others would agree with them. But others did not agree—they valued the origami made by experts more.

This experiment gives us another explanation for the popularity of DIY projects. People tend to prefer, and even overvalue, things they make themselves. Next week, we will discuss the implications of these study results for the DIY industry.

AUDIO TRACK 2.35 1:26 min

Page 147 Exercise F, Listen for Details

PROFESSOR So . . . the first experiment involved a kind of DIY project with a bracelet.

First, the researchers divided the participants into two groups.

Second, they put each participant in a separate room with a bracelet in it. They didn't let them bring anything into the room—no cell phones, books, or paper.

All of the bracelets were identical and easy to take apart and put back together.

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Then they gave each participant a choice. They could do nothing for 15 minutes—or they could take the bracelet apart and put it back together again.

At that point in the experiment, the researchers gave each group a different version of the instructions.

If participants in group one took the bracelet apart, they had to put it back together in exactly the same way.

If participants in group two took the bracelet apart, they had to assemble it in a different way, by following instructions for a new design. Got that?

OK. Then the researchers left the participants alone for 15 minutes.

AUDIO TRACK 2.36 1:03 min

Page 148, Exercise G, Listen for Details

PROFESSOR Now for the second study, which involved origami. Origami is the Japanese art of folding paper into different shapes, often of animals such as birds, fish, or insects. Origami experts are true artists, but anyone can follow instructions to make simple origami.

In the experiment, the participants, who were not experts, made origami frogs. Next, they were asked to value their frogs. Finally, they had to value the frogs made by experts. The results?

They valued their own frogs either the same or higher than the frogs made by experts . . . and they were sure that others would agree with them. But others did not agree—they valued the origami made by experts more.

AUDIO TRACK 2.37 0:48 min

Page 150, Speaking Skill: Explain a Process

Examples:

How something happened:

First, the researchers divided the participants into two groups.

Second, they put each participant in a separate room with a bracelet in it. They didn't let the participants bring anything into the room—no cell phones, books, or paper.

How to do something:

First, divide the participants into two groups.

Second, put each participant in a separate room. Don't let them bring anything into the room.

AUDIO TRACK 2.38 0:19 min

Page 151, Pronunciation Skill: Intonation in Lists

Example:

They didn't let the participants bring anything into the room—no cell phones, books, or paper.

AUDIO TRACK 2.39 0:56 min

Page 151, Exercises K and L

1. There are many websites where you can design your own products; for example, T-shirts, sneakers, jeans, or cell-phone cover.
2. DIY projects include cooking, gardening, knitting, and sewing.
3. There are DIY projects for all age groups: children, teenagers, adults, and the elderly.
4. People enjoy making origami of animals, such as birds, fish, and insects.
5. Researchers have conducted many experiments to test the effects of idleness on people's mental, emotional, and physical health.

AUDIO TRACK 2.40 2:19 min

Part 2, Page 154, Exercise D, Vocabulary

- a. When I **set out** to do something, I am usually successful in completing it.
- b. After the earthquake, people whose houses were destroyed had to move. They started a **settlement** just outside of town, close to the river.
- c. The new machines helped increase **productivity** on the farm. They helped the farmers do their work faster and more efficiently.
- d. His ideas are **sound**. He has developed them over years of research.
- e. In some countries, the **distribution** of wealth is quite unequal. For example, one percent of the people might control 99 percent of the wealth.
- f. In today's world, there are many different **means** of communication: email, text messages, telephone, etc.
- g. You can only **transcend** your fear if you understand what you are afraid of and face it directly. By facing your fear, you can often get past it and move on.
- h. When there is a large **supply** of houses and very few buyers, house prices go down. On the other hand, when there is a **scarcity** of houses and a lot of potential buyers, housing prices rise. This is called the law of **supply** and demand.
- i. Using machines rather than human workers, factories are able to make products on a large **scale**. For example, a shoe factory might be able to produce a thousand pairs of shoes a day, while someone making shoes by hand can only work on a small scale, making two pairs a day.

Video Scripts

Unit 1

VIDEO TRACK 1.1 5:33 min

Part 1, Page 6, Exercise E, Listen for Main Ideas

PODCAST HOST Welcome to today's podcast of Business Talk.

These days, it seems to me that everyone is starting or thinking about starting their own business. Just last week, I got hundreds of emails from 20-somethings (most of them living in their parents' basements) asking for advice on how to become the next Mark Zuckerberg. Now in case you've been living in your parents' basement for too long and don't get out much, Mark Zuckerberg is the guy who started Facebook at the age of 24. He's now an old guy—in his 30's—and his wealth is estimated at more than 30 billion dollars.

I've been doing this show for a lot of years, but I have never seen anything like this before. It's really striking. In the past, most middle-class kids would graduate from college, find a job, collect a paycheck, settle down and get married, buy a house, and have some kids—usually in that order.

In those days, maybe ten people a week would contact me to get my advice about starting their own businesses. But nowadays, with a difficult job market, rapid technological change, news all over the media about the so-called "overnight success" of entrepreneurs like Mark Zuckerberg, and television shows like Shark Tank—where people try to sell their ideas to investors with the money to help them start their own businesses—everybody thinks that they are going to become the next Bill Gates.

And that brings me to today's podcast. My purpose? It's simple. My inbox is full. I want to stop, or at least slow down, the traffic of email from all of you who think you would make great business owners. So here goes. Warning: This is not a reality TV show. It is just plain reality. Oh, and as always, you can check out our website for some additional information about today's podcast.

First, running a business is hard work. Really hard work. 100 hours a week of hard work.—At least. Seven-days a week of hard work. No kidding. Just ask Robert. Robert is a French chef who owns a café serving breakfast and lunch. He also makes food for parties and special events. Every day, he gets up at 2:00 or 3:00 AM and drives to the restaurant. He usually doesn't get home until 4:00 PM, unless he has a large party or special event. On those days, he might not get home until 10 PM or later. The next day, he gets up and does it all over again. The only day the shop is closed is on Sundays, but even then Robert usually spends hours at the shop catching up on paperwork or getting ready for the week to come. In other words, he works constantly. His advice to would-be small business owners? Do not fool yourself. The freedom of being your own boss might sound great, but say goodbye to free time.

Second, most business owners never get rich. In fact, about one third of businesses fail within one year, and about half fail within five years. And even businesses that have done great for years can suddenly fail. Don't believe me? Just ask Gail Horvath. She and her husband started a company in San Francisco called *Just Desserts*. They made and sold

high quality desserts for 30 years until a couple of bad business decisions sent the company into bankruptcy. So... do you want to lose your business and all of your money? Great, send me an email, and we can talk about how you can get started!

Third, do you want a family life? Do you want to be able to recognize your own children in a crowd? Good luck with that. The fact is that many entrepreneurs end up divorced. The story of Tony, a software and media entrepreneur, is not unusual. Tony admits that he put his wife through eight years of suffering while he created and tried to sell a television show. With two young children and no idea where the next paycheck would come from, Tony's wife gave him a choice: the TV show or her. He chose the TV show. She chose divorce. Do you really want to make that choice?

OK, so if you've listened to all of this and are still interested in starting your own business, great! Now go back and listen again, once a day for seven days. Got it? Seven days—the same number of days a week you will be working if you start your own business. Oh, and make sure you listen at 4:00 AM. Why? That's the time you will either be getting up to start your 20-hour workday, or going to bed after you've worked 20 hours straight. If at the end of the seven days, you are still interested in starting your own business, congratulations. You just might be the next Mark Zuckerberg . . . and yes, I'll answer your email.

That's it for today's podcast. Tomorrow, I'll be interviewing . . .

VIDEO TRACK 1.2 6:16 min

Part 2, Page 16, Exercise F, Watch for Main Ideas

I dedicated the past two years to understanding how people achieve their dreams. When we think about the dreams we have, and the dent we want to leave in the universe, it is striking to see how big of an overlap there is between the dreams that we have and projects that never happen. (Laughter) So I'm here to talk to you today about five ways how not to follow your dreams.

One: Believe in overnight success. You know the story, right? The tech guy built a mobile app and sold it very fast for a lot of money. You know, the story may seem real, but I bet it's incomplete. If you go investigate further, the guy has done 30 apps before and he has done a Master's on the topic, a Ph.D. He has been working on the topic for 20 years.

This is really interesting, I myself have a story in Brazil that people think is an overnight success. I come from a humble family, and two weeks before the deadline to apply to MIT, I started the application process. And, voila! I got in. People may think it's an overnight success, but that only worked because for the 17 years prior to that, I took life and education seriously. Your overnight success story is always a result of everything you've done in your life through that moment.

Two: Believe someone else has the answers for you. Constantly, people want to help out, right? All sorts of people: your family, your friends, your business partners, they all have opinions on which path you should take: "And let me tell you, go through this pipe." But whenever you go inside, there are other ways you have to pick as well. And you need to make those decisions yourself. No one else has the perfect answers for your life. And you need to keep picking those decisions, right? The pipes are infinite and you're going to bump your head, and it's a part of the process.

Three, and it's very subtle but very important: Decide to settle when growth is guaranteed. So when your life is going great, you have put together a great team, and you have growing revenue, and everything is set—time to settle. When I launched my first book, I worked really, really hard to distribute it everywhere in Brazil. With that, over three million people downloaded it, over 50,000 people bought physical copies. When I wrote a sequel, some impact was guaranteed. Even if I did little, sales would be okay. But okay is never okay. When you're growing towards a peak, you need to work harder than ever and find yourself another peak. Right? Maybe if I did little, a couple hundred thousand people would read it, and that's great already. But if I work harder than ever, I can bring this number up to millions. That's why I decided, with my new book, to go to every single state of Brazil. And I can already see a higher peak. There's no time to settle down.

Fourth tip, and that's really important: Believe the fault is someone else's. I constantly see people saying, "Yes, I had this great idea, but no investor had the vision to invest." "Oh, I created this great product, but you know the market is so bad, the sales didn't go well." Or, "I can't find good talent; my team is so below expectations." If you have dreams, it's your responsibility to make them happen. Yes, it may be hard to find talent. Yes, the market may be bad. But if no one invested in your idea, if no one bought your product, for sure, there is something there that is your fault. (Laughter) Definitely. You need to get your dreams and make them happen. And no one achieved their goals alone. But if you didn't make them happen, it's your fault and no one else's. Be responsible for your dreams.

And one last tip, and this one is really important as well: Believe that the only things that matter are the dreams themselves. Once I saw an ad, and it was a lot of friends, they were going up a mountain, it was a very high mountain, and it was a lot of work. You could see that they were sweating and this was tough. And they were going up, and they finally made it to the peak. Of course, they decided to celebrate, right? I'm going to celebrate, so, "Yes! We made it, we're at the top!" Two seconds later, one looks at the other and says, "Okay, let's go down." (Laughter)

Life is never about the goals themselves. Life is about the journey. Yes, you should enjoy the goals themselves, but people think that you have dreams, and whenever you get to reaching one of those dreams, it's a magical place where happiness will be all around. But achieving a dream is a momentary sensation, and your life is not. The only way to really achieve all of your dreams is to fully enjoy every step of your journey. That's the best way.

And your journey is simple—it's made of steps. Some steps will be right on. Sometimes you will trip. If it's right on, celebrate, because some people wait a lot to celebrate. And if you tripped, turn that into something to learn. If every step becomes something to learn or something to celebrate, you will for sure enjoy the journey.

So, five tips: Believe in overnight success, believe someone else has the answers for you, believe that when growth is guaranteed, you should settle down, believe the fault is someone else's, and believe that only the goals themselves matter. Believe me, if you do that, you will destroy your dreams. (Laughter)

Thank you.

VIDEO TRACK 1.3 6:34 min

Page 16, Exercise G, Watch for Details

Segment 1

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Two: Believe someone else has the answers for you. Constantly, people want to help out, right? All sorts of people: your family, your friends, your business partners, they all have opinions on which path you should take: "And let me tell you, go through this pipe." But whenever you go inside, there are other ways you have to pick as well. And you need to make those decisions yourself. No one else has the perfect answers for your life. And you need to keep picking those decisions, right? The pipes are infinite and you're going to bump your head, and it's a part of the process.

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VIDEO TRACK 1.4 1:48 min

Page 17, Exercise H, Identify Examples

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VIDEO TRACK 1.5 3:02 min

Page 17, Exercise J, Expand Your Vocabulary

"So when your life is going great, you have put together a great team, and you have growing revenue, and **everything is set**—time to settle."

1. What does **is set** mean?

- a. your life is over
- b. your work is done
- c. you begin working

"Oh, I created this great product, but you know **the market** is so bad, the sales didn't go well."

2. What does **the market** mean?

- a. a place to sell products or services
- b. business for a particular product
- c. the marketing department

"I can't find **good talent**; my team is so below expectations."

3. What does **good talent** mean?

- a. entrepreneurs
- b. performers, such as actors or singers
- c. qualified employees

"And they were going up, and they finally **made it** to the peak."

4. What does **make it** mean?

- a. create something valuable
- b. find something unexpected
- c. succeed in doing something difficult

"Some steps will be right on. Sometimes you will trip. If it's right on, celebrate, because some people wait a lot to celebrate. And if you tripped, **turn** that **into** something to learn."

5. What does **turn into** mean?

- a. change one thing to another thing
- b. change your mind
- c. go in the opposite direction

"If every step becomes something to learn or something to celebrate, you will **for sure** enjoy the journey."

6. What does **for sure** mean?

- a. always
- b. definitely
- c. especially

VIDEO TRACK 1.6 1:10 min

Page 19, Presentation Skill: Pause Effectively

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VIDEO TRACK 1.7 1:02 min

Page 20, Exercise C

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Unit 2

VIDEO TRACK 1.8 4:49 min

Part 1, Page 27, Exercise E, Listen for Main Ideas

PODCAST HOST Good afternoon, and welcome to

Communicating in the 21st Century. Our topic today is how using emoticons and emoji in texting, tweeting, and instant messaging is affecting the way we communicate. Go to our website if you'd like to see some of what I'm going to describe.

First, let's make sure everyone understands the terms *emoticon* and *emoji*. The word emoticon is a combination of two words: emotion and icon. An icon is a type of symbol, such as a drawing of a heart broken into two pieces to mean heartbroken.

Emoticons express both feelings and ideas in online communication.

As far as we know, a computer scientist named Scott Fahlman invented the first emoticon in 1982. You're probably familiar with it—it's a smiling face on its side. So, as you can see from this early example, emoticons are simple pictures made from punctuation or other non-letter symbols.

Emoji, on the other hand, are small, cartoon-like pictures of just about anything—from a doghouse to a watermelon. The word emoji is a Japanese word and is similar to a compound word in English—that is, a combination of two words to make one word, such as *basketball* or *sunlight*. The first character is *e-*, which means picture, and the second one is *-moji*, which means character.

Why the Japanese word? Because the first emoji were invented in Japan. At the end of the 1990s, a Japanese mobile network wanted to attract more teenage customers. So an employee, Shigetaka Kurita and his team invented 176 characters and made them available for use in instant messages. These playful characters, or emoji, became immediately popular with the Japanese, who, at least according to author Motoko Tamamuro, often feel more comfortable using indirect ways to get their ideas across, especially when sharing their feelings.

It seems that the desire to express our feelings through pictures is universal, however, because emoji quickly spread all over the world.

But emoji and emoticons can express much more than feelings. There are emoji animals, plants, weather and food, among many others. We can put them together to make an emoji "sentence." And a lot of emoticons are much more complex than just a smiling face.

Thus, people often use emoji and emoticons to replace the written word. And that brings us to our discussion topic for today: How are emoticons and emoji affecting communication?

Some say that this use of pictures is a sign that we are losing the ability to communicate complex ideas. They point out that our ancestors used pictures to communicate thousands of years ago, before the invention of writing. From this point of view, then, emoji and emoticons are like pictures scratched on rocks, and are a step backward to an earlier time, before the invention of writing.

But there are also strong supporters of emoji and emoticons. They argue that rather than taking something away from written language, emoji and emoticons improve it. How? They compare emoji and emoticons to facial expressions, such as raising your eyebrows, and gestures, such as shrugging your shoulders. They believe that emoji and emoticons add meaning to the written word or even change a word's meaning completely. Thus, they argue, emoji and emoticons are a step forward.

Still other people argue that texting, instant messaging, and tweeting are not really written language at all—they are much closer to oral conversation. Abbreviations such as the letter "u" for the pronoun "you" are similar to the natural reductions of informal speech, for instance "gonna" for "be going to."

So, what do you think? Are emoji and emoticons like word-eating locusts that will end up killing the written word? Or are they more like honeybees that pollinate our writing and allow us to grow our ideas and spread them over large distances? To join the conversation, call, text or tweet us at . . .

VIDEO TRACK 1.9 6:36 min

Part 2, Page 35, Exercise E, Watch for Main Ideas

I'm a lexicographer. I make dictionaries. And my job as a lexicographer is to try to put all the words possible into the dictionary. My job is not to decide what a word is; that is your job.

Everybody who speaks English decides together what's a word and what's not a word. Every language is just a group of people who agree to understand each other. Now, sometimes when people are trying to decide whether a word is good or bad, they don't really have a good reason. So they say something like, "Because grammar!" (Laughter) I don't actually really care about grammar too much—don't tell anybody.

But the word "grammar," actually, there are two kinds of grammar. There's the kind of grammar that kind of lives inside your brain, and if you're a native speaker of a language or a good speaker of a language, it's the unconscious rules that you follow when you speak that language. And this is what you learn when you learn a language as a child. And here's an example: This is a wug, right? It's a wug. Now there is another one. There are two of these. There are two . . . Audience: Wugs. Erin McKean: Exactly! You know how to make the plural of wug. That rule lives in your brain. You never had to be taught this rule, you just understand it. This is an experiment that was invented by a professor at [Boston College] named Jean Berko Gleason back in 1958. So we've been talking about this for a long time.

Now, these kinds of natural rules that exist in your brain, they're not like traffic laws, they're more like laws of nature. And nobody has to remind you to obey a law of nature, right? When you leave the house in the morning, your mom

doesn't say, "Hey, honey, I think it's going to be cold, take a hoodie, don't forget to obey the law of gravity." Nobody says this. Now, there are other rules that are more about manners than they are about nature. So you can think of a word as like a hat. Once you know how hats work, nobody has to tell you, "Don't wear hats on your feet." What they have to tell you is, "Can you wear hats inside? Who gets to wear a hat? What are the kinds of hats you get to wear?" Right? Those are more of the second kind of grammar, which linguists often call usage, as opposed to grammar.

Now, sometimes people use this kind of rules-based grammar to discourage people from making up words. And I think that is, well, stupid. So, for example, people are always telling you, "Be creative, make new music, do art, invent things, science and technology." But when it comes to words, they're like, "Don't! No. Creativity stops right here, whippersnappers. Give it a rest." (Laughter) But that makes no sense to me. Words are great. We should have more of them. I want you to make as many new words as possible. And I'm going to tell you six ways that you can use to make new words in English.

The first way is the simplest way. Basically, steal them from other languages. ["Go rob other people"] (Laughter) Linguists call this borrowing, but we never give the words back, so I'm just going to be honest and call it stealing. We usually take words for things that we like, like delicious food. We took "kumquat" from Chinese, we took "caramel" from French. We also take words for cool things like "ninja," right? We took that from Japanese, which is kind of a cool trick because ninjas are hard to steal from. (Laughter)

So another way that you can make words in English is by squishing two other English words together. This is called compounding. Words in English are like LEGO: If you use enough force, you can put any two of them together. (Laughter) We do this all the time in English: Words like "heartbroken," "bookworm," "sandcastle" all are compounds. So go ahead and make words like "duckface," just don't make duckface. (Laughter)

Another way that you can make words in English is kind of like compounding, but instead you use so much force when you squish the words together that some parts fall off. So these are blend words, like "brunch" is a blend of "breakfast" and "lunch." "Motel" is a blend of "motor" and "hotel." Who here knew that "motel" was a blend word? Yeah, that word is so old in English that lots of people don't know that there are parts missing. "Edutainment" is a blend of "education" and "entertainment." And of course, "electrocute" is a blend of "electric" and "execute." (Laughter)

You can also make words by changing how they operate. This is called functional shift. You take a word that acts as one part of speech, and you change it into another part of speech. Okay, who here knew that "friend" hasn't always been a verb? "Friend" used to be noun and then we verbed it. Almost any word in English can be verbed. You can also take adjectives and make them into nouns. "Commercial" used to be an adjective and now it's a noun. And of course, you can "green" things.

Another way to make words in English is back-formation. You can take a word and you can kind of squish it down a little bit. So for example, in English we had the word "editor" before we had the word "edit." "Edit" was formed from "editor."

Another way to make words in English is to take the first letters of something and squish them together. So National

Aeronautics and Space Administration becomes NASA. And of course you can do this with anything, OMG!

Why should you make words? You should make words because every word is a chance to express your idea and get your meaning across. And new words grab people's attention. They get people to focus on what you're saying and that gives you a better chance to get your meaning across. And a lot of people on this stage today have said, "In the future, you can do this, you can help with this, you can help us explore, you can help us invent." You can make a new word right now. English has no age limit. Go ahead, start making words today, send them to me, and I will put them in my online dictionary, Wordnik. Thank you so much. (Applause)

VIDEO TRACK 1.10 2:44 min

Page 35, Exercise F, Watch for Details

Segment 1

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Segment 2

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The first way is the simplest way. Basically, steal them from other languages. ["Go rob other people"] (Laughter) Linguists call this borrowing, but we never give the words back, so I'm just going to be honest and call it stealing. We usually take words for things that we like, like delicious food. We took "kumquat" from Chinese, we took "caramel" from French. We also take words for cool things like "ninja," right? We took that from Japanese, which is kind of a cool trick because ninjas are hard to steal from. (Laughter)

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Another way that you can make words in English is kind of like compounding, but instead you use so much force when you squish the words together that some parts fall off. So these are blend words, like "brunch" is a blend of "breakfast" and "lunch." "Motel" is a blend of "motor" and "hotel." Who here knew that "motel" was a blend word? Yeah, that word is so old in English that lots of people don't know that there are parts missing. "Edutainment" is a blend of "education" and "entertainment." And of course, "electrocute" is a blend of "electric" and "execute." (Laughter)

You can also make words by changing how they operate. This is called functional shift. You take a word that acts as one part of speech, and you change it into another part of speech. Okay, who here knew that "friend" hasn't always been a verb? "Friend" used to be noun and then we verbed it. Almost any word in English can be verbed. You can also take adjectives and make them into nouns. "Commercial" used to be an adjective and now it's a noun. And of course, you can "green" things.

Another way to make words in English is back-formation. You can take a word and you can kind of squish it down a little bit. So for example, in English we had the word "editor" before we had the word "edit." "Edit" was formed from "editor."

Another way to make words in English is to take the first letters of something and squish them together. So National Aeronautics and Space Administration becomes NASA. And of course you can do this with anything, OMG!

VIDEO TRACK 1.12 2:32 min

Page 36, Exercise H, Listen for Explanations of Words and Terms

Segment 1

I'm a lexicographer. I make dictionaries. And my job as a lexicographer is to try to put all the words possible into the

dictionary. My job is not to decide what a word is; that is your job.

Segment 2

There's the kind of grammar that kind of lives inside your brain, and if you're a native speaker of a language or a good speaker of a language, it's the unconscious rules that you follow when you speak that language. And this is what you learn when you learn a language as a child.

Segment 3

So another way that you can make words in English is by squishing two other English words together. This is called compounding. Words in English are like LEGO: If you use enough force, you can put any two of them together. (Laughter) We do this all the time in English: Words like "heartbroken," "bookworm," "sandcastle" all are compounds. So go ahead and make words like "duckface," just don't make duckface. (Laughter)

Segment 4

Another way that you can make words in English is kind of like compounding, but instead you use so much force when you squish the words together that some parts fall off. So these are blend words, like "brunch" is a blend of "breakfast" and "lunch." "Motel" is a blend of "motor" and "hotel."

VIDEO TRACK 1.13 2:47 min

Page 37, Exercise J, Expand Your Vocabulary

"Now, these kinds of natural rules that exist in your brain, they're not like traffic laws, they're more like **laws of nature**. And nobody has to remind you to obey a law of nature, right? Those are more of the second kind of grammar, which linguists often call usage, **as opposed to** grammar."

1. What are **laws of nature**?

- a. a set of laws that people must follow or they will be punished
- b. a set of rules that most people choose to follow, although they do not have to
- c. a set of scientific rules, such as the law of gravity, that govern the natural world

2. What does **as opposed to** mean?

- a. a little bit like
- b. different from
- c. against

"So, for example, people are always telling you, "Be creative, make new music, do art, invent things, science and technology." But when it comes to words, they're like, "Don't! No. Creativity stops right here, whippersnappers. Give it a rest." But that **makes no sense** to me. Words are great. We should have more of them."

3. What does **give it a rest** mean?

- a. give up; quit doing something
- b. be creative
- c. take a break

4. What does **makes no sense** mean?

- a. has no answer
- b. is impossible
- c. is not logical

"You can make a new word right now. English has no age limit. **Go ahead**, start making words today, send them to me, and I will put them in my online dictionary, Wordnik."

5. What does **go ahead** mean?

- a. get started
- b. go faster
- c. go in front

Unit 3

VIDEO TRACK 1.14 4:42 min

Part 1, Page 46, Exercise E, Listen for Main Ideas

PROFESSOR Today we're going to talk about animal heroes—that is, animals that help save human lives. Let's start with man's best friend, the dog. Dogs have been used for search and rescue since at least the 17th century, when they helped rescue lost and injured travelers in the Western Alps.

Monks from the St. Bernard Hospice and Monastery, located in the 49-mile St. Bernard Pass between Switzerland and Italy, kept a breed of dog with an excellent sense of direction. Due to their sense of direction, the dogs were very helpful in the heavy snowstorms that were common in the area. However, the monks soon discovered that the dogs had another, equally valuable skill. They were able to find people buried under the snow by avalanches. How? By using their sense of smell, estimated to be 10,000–100,000 times stronger than ours. Over the next 200 years, dogs rescued more than 2,000 people in the St. Bernard Pass.

Today, as you probably know, dogs are among the first responders to disasters. Search and rescue dogs are specially trained to find survivors buried in the rubble after a disaster.

Due to innovative technology, search and rescue dogs are becoming even more effective. The Fido Vest is one example.

It has sensors on it that dogs can be trained to activate. How does it work? Well, imagine a plane crash in a mountainous area without roads. A dog wearing a Fido Vest is sent out to find survivors. When the dog finds a survivor, he activates a global positioning system, or GPS, on the vest. The sensor sends the location to his human partner, who then sends help to the site. Although the vest is still being tested, in the future it could lower the cost and improve the success of search and rescue missions in difficult to access areas.

OK, now let's move on to an unusual animal hero: the rat. Rats are used not in search and rescue, but rather to prevent deaths in areas devastated by war.

During wartime, soldiers often bury small bombs underground. These bombs, called landmines, explode when stepped on. When a war is over, it is very difficult to remove all of the landmines. That's why years after a war, people continue to be killed.

The solution? Rats. Like dogs, rats have an extraordinary sense of smell. They can be trained to scratch at the ground when they smell TNT, the explosive chemical used in most landmines. And they are fast: in 20 minutes, one rat can search an area that would take a human searcher up to four days. The rats can also do it safely because, unlike humans, they do not weigh enough to set off the mines. After the rats indicate the exact locations of the mines, their human partners can safely explode them.

The final animal we will talk about today is the raven. Do you know the expression "bird brain"? It's used to refer to someone who's done something stupid. Because birds'

brains are very small, people assumed that they were not very smart. Well, this assumption has been disproven. In fact, scientists are learning more about bird intelligence every day. And ravens are among the most intelligent. But are they trainable? According to Emily Corey, a graduate student at the University of Arizona, the answer is "absolutely!" She believes ravens would make excellent search and rescue animals. Why? First, because of their intelligence; second, because of their ability to form close relationships with humans; third, because of their excellent eyesight; and finally, because they can cover large distances quickly. But how can even a *trained* bird rescue someone? Here's one idea: ravens wearing geospatial locators could find people lost in the wilderness. First, the raven would fly over the area where the person was last seen. After locating the person, the raven would return to its human partner, who would use the data from the locator to send rescuers to the site.

While Corey's research is just getting started, she warns us not to underestimate the raven. Who knows? It could become the next hero of the animal kingdom.

OK, I'll stop there to leave time for questions . . .

VIDEO TRACK 1.15 8:35 min

Part 2, Page 55, Exercise F, Watch for Main Ideas

Over a million people are killed each year in disasters. Two and a half million people will be permanently disabled or displaced, and the communities will take 20 to 30 years to recover and billions of economic losses.

If you can reduce the initial response by one day, you can reduce the overall recovery by a thousand days, or three years. See how that works? If the initial responders can get in, save lives, mitigate whatever flooding danger there is, that means the other groups can get in to restore the water, the roads, the electricity, which means then the construction people, the insurance agents, all of them can get in to rebuild the houses, which then means you can restore the economy, and maybe even make it better and more resilient to the next disaster. A major insurance company told me that if they can get a homeowner's claim processed one day earlier, it'll make a difference of six months in that person getting their home repaired.

And that's why I do disaster robotics—because robots can make a disaster go away faster.

These are the UAVs. These are two types of UAVs: a rotorcraft, or hummingbird; a fixed-wing, a hawk. And they're used extensively since 2005—Hurricane Katrina. Let me show you how this hummingbird, this rotorcraft, works. Fantastic for structural engineers. Being able to see damage from angles you can't get from binoculars on the ground or from a satellite image, or anything flying at a higher angle. But it's not just structural engineers and insurance people who need this. You've got things like this fixed-wing, this hawk. Now, this hawk can be used for geospatial surveys. That's where you're pulling imagery together and getting 3D reconstruction.

We used both of these at the Oso mudslides up in Washington State, because the big problem was geospatial and hydrological understanding of the disaster—not the search and rescue. The search and rescue teams had it under control and knew what they were doing. The bigger problem was that river and mudslide might wipe them out and flood the responders. And not only was it challenging to the responders and property damage, it's also putting at risk the future of salmon fishing along that part of Washington

State. So they needed to understand what was going on. In seven hours, from going from Arlington, driving from the Incident Command Post to the site, flying the UAVs, processing the data, driving back to Arlington command post—seven hours. We gave them in seven hours data that they could take only two to three days to get any other way—and at higher resolution. It's a game changer.

And don't just think about the UAVs. I mean, they are sexy—but remember, 80 percent of the world's population lives by water, and that means our critical infrastructure is underwater—the parts that we can't get to, like the bridges and things like that. And that's why we have unmanned marine vehicles, one type of which you've already met, which is SARbot, a square dolphin. It goes underwater and uses sonar. Well, why are marine vehicles so important and why are they very, very important? They get overlooked. Think about the Japanese tsunami—400 miles of coastland totally devastated, twice the amount of coastland devastated by Hurricane Katrina in the United States. You're talking about your bridges, your pipelines, your ports—wiped out. And if you don't have a port, you don't have a way to get in enough relief supplies to support a population. That was a huge problem at the Haiti earthquake. So we need marine vehicles.

Now, let's look at a viewpoint from the SARbot of what they were seeing. We were working on a fishing port. We were able to reopen that fishing port, using her sonar, in four hours. That fishing port was told it was going to be six months before they could get a manual team of divers in, and it was going to take the divers two weeks. They were going to miss the fall fishing season, which was the major economy for that part, which is kind of like their Cape Cod. UMVs, very important.

But you know, all the robots I've shown you have been small, and that's because robots don't do things that people do. They go places people can't go. And a great example of that is Bujold. Unmanned ground vehicles are particularly small, so Bujold—

(Laughter)

Say hello to Bujold.

(Laughter)

Bujold was used extensively at the World Trade Center to go through Towers 1, 2 and 3. You're climbing into the rubble, rappelling down, going deep in spaces. And just to see the World Trade Center from Bujold's viewpoint, look at this. You're talking about a disaster where you can't fit a person or a dog—and it's on fire. The only hope of getting to a survivor way in the basement, you have to go through things that are on fire. It was so hot, on one of the robots, the tracks began to melt and come off. Robots don't replace people or dogs, or hummingbirds or hawks or dolphins. They do things new. They assist the responders, the experts, in new and innovative ways.

The biggest problem is not making the robots smaller, though. It's not making them more heat-resistant. It's not making more sensors. The biggest problem is the data, the informatics, because these people need to get the right data at the right time.

So wouldn't it be great if we could have experts immediately access the robots without having to waste any time of driving to the site and that, so whoever's there, use their robots over the Internet. Well, let's think about that. Let's think about a chemical train derailment in a rural county. What are the odds that the experts, your chemical engineer,

your railroad transportation engineers, have been trained on whatever UAV that particular county happens to have? Probably, like, none. So we're using these kinds of interfaces to allow people to use the robots without knowing what robot they're using, or even if they're using a robot or not. What the robots give you, what they give the experts, is data.

The problem becomes: who gets what data when? One thing to do is to ship all the information to everybody and let them sort it out. Well, the problem with that is it overwhelms the networks, and worse yet, it overwhelms the cognitive abilities of each of the people trying to get that one nugget of information they need to make the decision that's going to make the difference. So we need to think about those kinds of challenges. So it's the data.

At the World Trade Center, going back to the World Trade Center, we tried to solve that problem by just recording the data from Bujold only when she was deep in the rubble, because that's what the USAR team said they wanted. What we didn't know at the time was that the civil engineers would have loved, needed the data if we recorded the box beams, the serial numbers, the locations, as we went into the rubble. We lost valuable data. So the challenge is getting all the data and getting it to the right people.

So really, "disaster robotics" is a misnomer. It's not about the robots. It's about the data.

(Applause)

So my challenge to you: the next time you hear about a disaster, look for the robots. They may be underground, they may be underwater, they may be in the sky, but they should be there. Look for the robots, because robots are coming to the rescue.

VIDEO TRACK 1.16 3:16 min

Page 56, Exercise G

Segment 1 (repeated)

Over a million people are killed each year in disasters. Two and a half million people will be permanently disabled or displaced, and the communities will take 20 to 30 years to recover and billions of economic losses.

Segment 2 (repeated)

If you can reduce the initial response by one day, you can reduce the overall recovery by a thousand days, or three years. See how that works? If the initial responders can get in, save lives, mitigate whatever flooding danger there is, that means the other groups can get in to restore the water, the roads, the electricity, which means then the construction people, the insurance agents, all of them can get in to rebuild the houses, which then means you can restore the economy, and maybe even make it better and more resilient to the next disaster. A major insurance company told me that if they can get a homeowner's claim processed one day earlier, it'll make a difference of six months in that person getting their home repaired.

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VIDEO TRACK 1.17 7:28 min

Page 57, Exercise J, Watch for Details

These are the UAVs. These are two types of UAVs: a rotorcraft, or hummingbird; a fixed-wing, a hawk. And they're used extensively since 2005—Hurricane Katrina. Let

me show you how this hummingbird, this rotorcraft, works. Fantastic for structural engineers. Being able to see damage from angles you can't get from binoculars on the ground or from a satellite image, or anything flying at a higher angle. But it's not just structural engineers and insurance people who need this. You've got things like this fixed-wing, this hawk. Now, this hawk can be used for geospatial surveys. That's where you're pulling imagery together and getting 3D reconstruction.

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So really, "disaster robotics" is a misnomer. It's not about the robots. It's about the data.

(Applause)

So my challenge to you: the next time you hear about a disaster, look for the robots. They may be underground, they may be underwater, they may be in the sky, but they should be there. Look for the robots, because robots are coming to the rescue.

VIDEO TRACK 1.18 3:26 min

Page 57, Exercise L, Expand Your Vocabulary

"That's where you're **pulling** imagery **together** and getting 3D reconstruction."

1. What does **pull together** means

- a. cooperate and work as a team
- b. pull things apart to destroy them

- c. gather several things together to create one thing

"You're talking about your bridges, your pipelines, your ports—**wiped out**. And if you don't have a port, you don't have a way to get in enough relief supplies to support a population."

2. What does **wipe out mean?**

- a. damage
- b. clean up
- c. completely destroy

"And not only was it challenging to the responders and property damage, it's also **putting at risk** the future of salmon fishing along that part of Washington State."

3. What does **putting at risk mean?**

- a. endangering
- b. decreasing
- c. improving

"It's a **game changer**."

4. What is a **game changer?**

- a. something that completely changes the way you look at or do something
- b. something that encourages you to take a lot of risks
- c. something that makes you lose a game

"What are **the odds** that the experts, your chemical engineer, your railroad transportation engineers, have been trained on whatever UAV that particular county **happens to have**? Probably, like, none."

5. What does **the odds mean?**

- a. strange ideas
- b. probability
- c. uneven numbers

6. What does to **happen to (have) mean?**

- a. (have) by chance
- b. (have) a lot of
- c. (have) an accident

"The problem becomes: who gets what data when? One thing to do is to ship all the information to everybody and let them **sort it out**."

7. What does **sort out mean?**

- a. organize and figure out
- b. throw out
- c. find

VIDEO TRACK 1.19 0:35 min

Page 59, Presentation Skill: Use Body Language Effectively

The problem becomes: who gets what data when? One thing to do is to ship all the information to everybody and let them sort it out. Well, the problem with that is it overwhelms the networks, and worse yet, it overwhelms the cognitive abilities of each of the people trying to get that one nugget of information they need to make the decision that's going to make the difference.

VIDEO TRACK 1.20 0:35 min

Page 59, Exercise C

The problem becomes: who gets what data when? One thing to do is to ship all the information to everybody and let them sort it out. Well, the problem with that is it overwhelms the networks, and worse yet, it overwhelms the cognitive abilities of each of the people trying to get that one nugget of information they need to make the decision that's going to make the difference.

Unit 4

VIDEO TRACK 1.21 6:37 min

Part 2, Pages 76 and 77, Exercise F, Watch for Main Ideas and Exercise G, Watch for Details

So, when I was in art school, I developed a shake in my hand, and this was the straightest line I could draw. Now in hindsight, it was actually good for some things, like mixing a can of paint or shaking a Polaroid, but at the time this was really doomsday. This was the destruction of my dream of becoming an artist.

The shake developed out of, really, a single-minded pursuit of pointillism, just years of making tiny, tiny dots. And eventually these dots went from being perfectly round to looking more like tadpoles, because of the shake. So to compensate, I'd hold the pen tighter, and this progressively made the shake worse, so I'd hold the pen tighter still. And this became a vicious cycle that ended up causing so much pain and joint issues, I had trouble holding anything. And after spending all my life wanting to do art, I left art school, and then I left art completely.

But after a few years, I just couldn't stay away from art, and I decided to go to a neurologist about the shake and discovered I had permanent nerve damage. And he actually took one look at my squiggly line, and said, "Well, why don't you just embrace the shake?"

So I did. I went home, I grabbed a pencil, and I just started letting my hand shake and shake. I was making all these scribble pictures. And even though it wasn't the kind of art that I was ultimately passionate about, it felt great. And more importantly, once I embraced the shake, I realized I could still make art. I just had to find a different approach to making the art that I wanted.

Now, I still enjoyed the fragmentation of pointillism, seeing these little tiny dots come together to make this unified whole. So I began experimenting with other ways to fragment images where the shake wouldn't affect the work, like dipping my feet in paint and walking on a canvas, or, in a 3D structure consisting of two-by-fours, creating a 2D image by burning it with a blowtorch. I discovered that, if I worked on a larger scale and with bigger materials, my hand really wouldn't hurt, and after having gone from a single approach to art, I ended up having an approach to creativity that completely changed my artistic horizons. This was the first time I'd encountered this idea that embracing a limitation could actually drive creativity.

At the time, I was finishing up school, and I was so excited to get a real job and finally afford new art supplies. I had this horrible little set of tools, and I felt like I could do so much more with the supplies I thought an artist was supposed to have.

So I got out of school, I got a job, I got a paycheck, I got myself to the art store, and I just went nuts buying supplies. And then when I got home, I sat down and I set myself to task to really try to create something just completely outside of the box. But I sat there for hours, and nothing came to mind. The same thing the next day, and then the next, quickly slipping into a creative slump. And I was in a dark place for a long time, unable to create. And it didn't make any sense, because I was finally able to support my art, and yet I was creatively blank.

But as I searched around in the darkness, I realized I was actually paralyzed by all of the choices that I never had before. And it was then that I thought back to my jittery hands. Embrace the shake. And I realized, if I ever wanted my creativity back, I had to quit trying so hard to think outside of the box and get back into it.

I wondered, could you become more creative, then, by looking for limitations? What if I could only create with a dollar's worth of supplies? At this point, I was spending a lot of my evenings in—well, I guess I still spend a lot of my evenings in Starbucks—but I know you can ask for an extra cup if you want one, so I decided to ask for 50. Surprisingly, they just handed them right over, and then with some pencils I already had, I made this project for only 80 cents. It really became a moment of clarification for me that we need to first be limited in order to become limitless.

. . . what if, instead of painting with a brush, I could only paint with karate chops? (Laughter) So I'd dip my hands in paint, and I just attacked the canvas, and I actually hit so hard that I bruised a joint in my pinkie and it was stuck straight for a couple of weeks.

(Laughter) (Applause)

(Applause) Or what if instead of making art to display, I had to destroy it? This seemed like the ultimate limitation, being an artist without art. This destruction idea turned into a yearlong project that I called Goodbye Art, where each and every piece of art had to be destroyed after its creation. In the beginning of Goodbye Art, I focused on forced destruction, like this image of Jimi Hendrix, made with over 7,000 matches. (Laughter)

[A]nd something really surprising came out of this. As I destroyed each project, I was learning to let go, let go of outcomes, let go of failures, and let go of imperfections. And in return, I found a process of creating art that's perpetual and unencumbered by results. I found myself in a state of constant creation, thinking only of what's next and coming up with more ideas than ever.

When I think back to my three years away from art, away from my dream, just going through the motions, instead of trying to find a different way to continue that dream, I just quit, I gave up. And what if I didn't embrace the shake? Because embracing the shake for me wasn't just about art and having art skills. It turned out to be about life, and having life skills. Because ultimately, most of what we do takes place here, inside the box, with limited resources. Learning to be creative within the confines of our limitations is the best hope we have to transform ourselves and, collectively, transform our world.

VIDEO TRACK 1.22 5:37 min

Pages 77 and 78, Exercise I, Watch and Take Notes

Segment 1

So, when I was in art school, I developed a shake in my hand, and this was the straightest line I could draw. Now in hindsight, it was actually good for some things, like mixing a can of paint or shaking a Polaroid, but at the time this was really doomsday. This was the destruction of my dream of becoming an artist.

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this became a vicious cycle that ended up causing so much pain and joint issues, I had trouble holding anything. And after spending all my life wanting to do art, I left art school, and then I left art completely.

But after a few years, I just couldn't stay away from art, and I decided to go to a neurologist about the shake and discovered I had permanent nerve damage. And he actually took one look at my squiggly line, and said, "Well, why don't you just embrace the shake?"

Segment 2

So I did. I went home, I grabbed a pencil, and I just started letting my hand shake and shake. I was making all these scribble pictures. And even though it wasn't the kind of art that I was ultimately passionate about, it felt great. And more importantly, once I embraced the shake, I realized I could still make art. I just had to find a different approach to making the art that I wanted.

Now, I still enjoyed the fragmentation of pointillism, seeing these little tiny dots come together to make this unified whole. So I began experimenting with other ways to fragment images where the shake wouldn't affect the work, like dipping my feet in paint and walking on a canvas, or, in a 3D structure consisting of two-by-fours, creating a 2D image by burning it with a blowtorch. I discovered that, if I worked on a larger scale and with bigger materials, my hand really wouldn't hurt, and after having gone from a single approach to art, I ended up having an approach to creativity that completely changed my artistic horizons. This was the first time I'd encountered this idea that embracing a limitation could actually drive creativity.

Segment 3

At the time, I was finishing up school, and I was so excited to get a real job and finally afford new art supplies. I had this horrible little set of tools, and I felt like I could do so much more with the supplies I thought an artist was supposed to have.

So I got out of school, I got a job, I got a paycheck, I got myself to the art store, and I just went nuts buying supplies. And then when I got home, I sat down and I set myself to task to really try to create something just completely outside of the box.

But I sat there for hours, and nothing came to mind. The same thing the next day, and then the next, quickly slipping into a creative slump. And I was in a dark place for a long time, unable to create. And it didn't make any sense, because I was finally able to support my art, and yet I was creatively blank.

But as I searched around in the darkness, I realized I was actually paralyzed by all of the choices that I never had before. And it was then that I thought back to my jittery hands. Embrace the shake. And I realized, if I ever wanted my creativity back, I had to quit trying so hard to think outside of the box and get back into it.

I wondered, could you become more creative, then, by looking for limitations? What if I could only create with a dollar's worth of supplies? At this point, I was spending a lot of my evenings in—well, I guess I still spend a lot of my evenings in Starbucks—but I know you can ask for an extra cup if you want one, so I decided to ask for 50. Surprisingly, they just handed them right over, and then with some pencils I already had, I made this project for only 80 cents. It really became a moment of clarification for me that we need to first be limited in order to become limitless.

... what if, instead of painting with a brush, I could only paint with karate chops? (Laughter) So I'd dip my hands in paint, and I just attacked the canvas, and I actually hit so hard that I bruised a joint in my pinkie and it was stuck straight for a couple of weeks. (Laughter) (Applause)

(Applause) Or what if instead of making art to display, I had to destroy it? This seemed like the ultimate limitation, being an artist without art. This destruction idea turned into a yearlong project that I called Goodbye Art, where each and every piece of art had to be destroyed after its creation. In the beginning of Goodbye Art, I focused on forced destruction, like this image of Jimi Hendrix, made with over 7,000 matches.

VIDEO TRACK 1.23 2:44 min

Page 78, Exercise K, Expand Your Vocabulary

"So I got out of school, I got a job, I got a paycheck, I got myself to the art store, and I just **went nuts** buying supplies."

1. What does **go nuts** (buying) mean?

- a. buy in a hurry and with a lot of excitement
- b. go completely crazy
- c. spend someone else's money

"And then when I got home, I sat down and I set myself to task to really try to create something just completely outside of the box. But I sat there for hours, and nothing **came to mind**."

2. What does **come to mind** mean?

- a. enter your mind and appear in your thoughts
- b. is forgotten as soon as you think of it
- c. is something that bothers you a lot

"I found myself in a state of constant creation, thinking only of what's next and **coming up with** more ideas than ever."

3. What does **coming up with** mean?

- a. finding and writing down an idea
- b. imagining or thinking of something new
- c. remembering something important

"When I think back to my three years away from art, away from my dream, just **going through the motions**, instead of trying to find a different way to continue that dream, I just quit, I gave up."

4. What does **going through the motions** mean?

- a. doing something without thinking and without any passion
- b. quitting doing something
- c. struggling to do something difficult.

"As I destroyed each project, I was learning to **let go**, let go of outcomes, let go of failures, and let go of imperfections."

5. What does **let go** mean?

- a. not fail anymore
- b. free yourself of something that has been bothering you
- c. stop holding on and fall down

VIDEO TRACK 1.24 0:27 min

Page 79, Presentation Skill: Use Repetition and Rephrasing

As I destroyed each project, I was learning to let go, let go of outcomes, let go of failures, and let go of imperfections. And in return, I found a process of creating art that's perpetual and unencumbered by results.

Unit 5

VIDEO TRACK 1.25 4:48 min

Part 1, Page 86, Exercise E, Listen for Main Ideas

PROFESSOR Our topic today is the effects of stress on the body. These effects can be positive or negative. First, you need to understand the two types of stress: acute and chronic.

You experience acute stress when you are in physical danger. Acute stress lasts only a short time, just until the danger is gone.

For example, imagine you're walking home when a big scary dog jumps out at you. What happens? You're suddenly full of energy, ready to run away or fight. This is called the "fight or flight" reaction. Where does all that energy come from? It starts with your brain releasing the powerful stress hormones adrenaline and cortisol. These hormones act on the systems in your body that can give you immediate energy. This strengthens your body and enhances your reaction time. Suddenly, you feel like Superman.

Your heart starts to beat faster, and your blood pressure goes up. Your breathing rate also increases to get more oxygen to your brain and muscles. Your muscles tense up, and you are able to run faster than you've ever run. After you're safe, your brain stops releasing stress hormones, and you lose your special powers. Superman is gone, but so is the big scary dog.

That's acute stress. It's your body's natural reaction to a crisis, and it's not at all harmful. In fact, it can save your life.

Chronic stress is a completely different story. At first, however, it looks and feels exactly like acute stress. The body's stress response is the same—you get all the same special powers—but the problem is that the brain doesn't stop releasing the stress hormones. As a result, your blood pressure and breathing rate remain high, and your muscles don't relax. That's a big problem. Even Superman cannot stay Superman forever! So, the difference between acute and chronic stress is in how long the stress reaction lasts. And being stressed for a long time, rather than saving you, can actually kill you.

So, why does the brain keep releasing stress hormones after the danger is gone? The reason is that the danger is not gone. To explain this, I need to go back in time, thousands of years. At that time, most of the dangers humans faced were physical, like wild animals and storms.

And the crisis didn't last long; inevitably, you either escaped or died.

These days, however, we rarely have to face a wild animal, and we can usually predict and avoid bad storms. So, where's the danger? It's often in our minds. Nowadays, our stress tends to be caused by psychological fear or worry about the future, not physical danger. For example, we may worry that we'll lose our job and not be able to support our family. And that future feels like a dangerous place. Of course we can't escape that kind of danger with our "special powers." Unfortunately, our bodies cannot always tell the difference between that fear and a present danger. So, sometimes, when we're afraid of losing our job, our bodies react as if a lion were chasing us. Why? Because our body's stress mechanism is the same as it was thousands of years ago. The problem is that the fear of losing a job can last a long time. This leads to chronic stress, which is associated with some serious health problems.

One of the most obvious examples is cardiovascular, or heart, disease. Your heart is a muscle. Stress hormones make it beat very fast. This is not a problem over the short term. However, over time, the muscles of your heart will become thicker from all that beating, and your blood pressure will remain high. This combination of thicker heart muscles and high blood pressure increases your risk of heart disease.

The effects of chronic stress on the heart are the easiest to explain, but every day research reveals other parts of the body that are affected. Next week we'll talk about how chronic stress can affect the brain, the stomach, and the muscles.

VIDEO TRACK 1.26 10:44 min

Part 2, Page 96, Exercise E, Watch for Main Ideas

I have a confession to make. But first, I want you to make a little confession to me. In the past year, I want you to just raise your hand if you've experienced relatively little stress. Anyone?

How about a moderate amount of stress?

Who has experienced a lot of stress? Yeah. Me too.

But that is not my confession. My confession is this: I am a health psychologist, and my mission is to help people be happier and healthier. But I fear that something I've been teaching for the last 10 years is doing more harm than good, and it has to do with stress. For years I've been telling people, stress makes you sick. It increases the risk of everything from the common cold to cardiovascular disease. Basically, I've turned stress into the enemy. But I have changed my mind about stress, and today, I want to change yours.

Let me start with the study that made me rethink my whole approach to stress. This study tracked 30,000 adults in the United States for eight years, and they started by asking people, "How much stress have you experienced in the last year?" They also asked, "Do you believe that stress is harmful for your health?" And then they used public death records to find out who died.

(Laughter)

Okay. Some bad news first. People who experienced a lot of stress in the previous year had a 43 percent increased risk of dying. But that was only true for the people who also believed that stress is harmful for your health.

(Laughter)

People who experienced a lot of stress but did not view stress as harmful were no more likely to die. In fact, they had the lowest risk of dying of anyone in the study, including people who had relatively little stress.

Now the researchers estimated that over the eight years they were tracking deaths, 182,000 Americans died prematurely, not from stress, but from the belief that stress is bad for you.

(Laughter)

That is over 20,000 deaths a year. Now, if that estimate is correct, that would make believing stress is bad for you the 15th largest cause of death in the United States last year, killing more people than skin cancer, HIV/AIDS and homicide.

(Laughter)

You can see why this study freaked me out. Here I've been spending so much energy telling people stress is bad for your health.

So this study got me wondering: Can changing how you think about stress make you healthier? And here the science says yes. When you change your mind about stress, you can change your body's response to stress.

Now, in a typical stress response, your heart rate goes up, and your blood vessels constrict like this. And this is one of the reasons that chronic stress is sometimes associated with cardiovascular disease. It's not really healthy to be in this state all the time. But in the study, when participants viewed their stress response as helpful, their blood vessels stayed relaxed like this. Their heart was still pounding, but this is a much healthier cardiovascular profile. It actually looks a lot like what happens in moments of joy and courage. Over a lifetime of stressful experiences, this one biological change could be the difference between a stress-induced heart attack at age 50 and living well into your 90s. And this is really what the new science of stress reveals, that how you think about stress matters.

So my goal as a health psychologist has changed. I no longer want to get rid of your stress. I want to make you better at stress. And we just did a little intervention. If you raised your hand and said you'd had a lot of stress in the last year, we could have saved your life, because hopefully the next time your heart is pounding from stress, you're going to remember this talk and you're going to think to yourself, this is my body helping me rise to this challenge. And when you view stress in that way, your body believes you, and your stress response becomes healthier.

I want to tell you about one of the most under-appreciated aspects of the stress response, and the idea is this: Stress makes you social.

To understand this side of stress, we need to talk about a hormone, oxytocin.

Oxytocin is a neuro-hormone. It fine-tunes your brain's social instincts. It primes you to do things that strengthen close relationships. Oxytocin makes you crave physical contact with your friends and family. It enhances your empathy. It even makes you more willing to help and support the people you care about. But here's what most people don't understand about oxytocin. It's a stress hormone. Your pituitary gland pumps this stuff out as part of the stress response. It's as much a part of your stress response as the adrenaline that makes your heart pound. And when oxytocin is released in the stress response, it is motivating you to seek support. Your biological stress response is nudging you to tell someone how you feel, instead of bottling it up. Your stress response wants to make sure you notice when someone else in your life is struggling so that you can support each other. When life is difficult, your stress response wants you to be surrounded by people who care about you.

Okay, so how is knowing this side of stress going to make you healthier? Well, oxytocin doesn't only act on your brain. It also acts on your body, and one of its main roles in your body is to protect your cardiovascular system from the effects of stress. It's a natural anti-inflammatory. It also helps your blood vessels stay relaxed during stress. But my favorite effect on the body is actually on the heart. Your heart has receptors for this hormone, and oxytocin helps heart cells regenerate and heal from any stress-induced damage. This stress hormone strengthens your heart.

And the cool thing is that all of these physical benefits of oxytocin are enhanced by social contact and social support. So when you reach out to others under stress, either to seek support or to help someone else, you release more of this

hormone, your stress response becomes healthier, and you actually recover faster from stress. I find this amazing, that your stress response has a built-in mechanism for stress resilience, and that mechanism is human connection.

I want to finish by telling you about one more study. And listen up, because this study could also save a life. This study tracked about 1,000 adults in the United States, and they ranged in age from 34 to 93, and they started the study by asking, "How much stress have you experienced in the last year?" They also asked, "How much time have you spent helping out friends, neighbors, people in your community?" And then they used public records for the next five years to find out who died.

Okay, so the bad news first: For every major stressful life experience, like financial difficulties or family crisis, that increased the risk of dying by 30 percent. But—and I hope you are expecting a "but" by now—but that wasn't true for everyone. People who spent time caring for others showed absolutely no stress-related increase in dying. Zero. Caring created resilience.

And so we see once again that the harmful effects of stress on your health are not inevitable. How you think and how you act can transform your experience of stress. When you choose to view your stress response as helpful, you create the biology of courage. And when you choose to connect with others under stress, you can create resilience. Now I wouldn't necessarily ask for more stressful experiences in my life, but this science has given me a whole new appreciation for stress. Stress gives us access to our hearts. The compassionate heart that finds joy and meaning in connecting with others, and yes, your pounding physical heart, working so hard to give you strength and energy. And when you choose to view stress in this way, you're not just getting better at stress, you're actually making a pretty profound statement. You're saying that you can trust yourself to handle life's challenges. And you're remembering that you don't have to face them alone.

Thank you.

VIDEO TRACK 1.27 2:42 min

Page 97, Exercise F, Watch for Details

Segment 1

Let me start with the study that made me rethink my whole approach to stress. This study tracked 30,000 adults in the United States for eight years, and they started by asking people, "How much stress have you experienced in the last year?" They also asked, "Do you believe that stress is harmful for your health?" And then they used public death records to find out who died.

(Laughter)

Okay. Some bad news first. People who experienced a lot of stress in the previous year had a 43 percent increased risk of dying. But that was only true for the people who also believed that stress is harmful for your health.

(Laughter)

People who experienced a lot of stress but did not view stress as harmful were no more likely to die. In fact, they had the lowest risk of dying of anyone in the study, including people who had relatively little stress.

Now the researchers estimated that over the eight years they were tracking deaths, 182,000 Americans died prematurely, not from stress, but from the belief that stress is bad for you.

(Laughter)

That is over 20,000 deaths a year. Now, if that estimate is correct, that would make believing stress is bad for you the 15th largest cause of death in the United States last year, killing more people than skin cancer, HIV/AIDS and homicide.

(Laughter)

Segment 2

So when you reach out to others under stress, either to seek support or to help someone else, you release more of this hormone, your stress response becomes healthier, and you actually recover faster from stress. I find this amazing, that your stress response has a built-in mechanism for stress resilience, and that mechanism is human connection.

VIDEO TRACK 1.28 3:35 min

Page 97, Exercise H, Expand Your Vocabulary

"You can see why this study **freaked me out**. Here I've been spending so much energy telling people stress is bad for your health."

1. What does **freak (someone) out** mean?

- a. confuse and disappoint someone
- b. make someone feel stressed
- c. surprise and excite someone

"Can changing how you think about stress make you healthier? And here the science says yes. When you **change your mind** about stress, you can change your body's response to stress."

2. What does **change your mind** mean?

- a. become something different; transform
- b. exchange; switch
- c. think differently

"Oxytocin is a neuro-hormone. It **fine-tunes** your brain's social instincts. It primes you to do things that strengthen close relationships. Oxytocin makes you crave physical contact with your friends and family. It enhances your empathy. It even makes you more willing to help and support the people you care about."

3. What does **fine-tune** mean?

- a. fix something that is broken
- b. interfere with something
- c. make small changes to make something work better

"And when oxytocin is released in the stress response, it is motivating you to seek support. Your biological stress response is **nudging** you to tell someone how you feel, instead of **bottling it up**. Your stress response wants to make sure you notice when someone else in your life is struggling so that you can support each other."

4. What does **nudge** mean?

- a. allow
- b. encourage
- c. force

5. What does **bottle up** mean?

- a. hold inside
- b. release
- c. struggle

"So when you **reach out to** others under stress, either to seek support or to help someone else, you release more of this hormone, your stress response becomes healthier, and you actually recover faster from stress."

6. What does **reach out to** mean?

- a. make contact with

- b. stretch out your arms toward
- c. try to avoid

VIDEO TRACK 1.29 0:25 min

Page 99, Presentation Skill: Vary Your Pace

I want to tell you about one of the most under-appreciated aspects of the stress response, and the idea is this: Stress makes you social. To understand this side of stress, we need to talk about a hormone, oxytocin.

VIDEO TRACK 1.30 0:56 min

Page 100, Exercise B

And when you choose to view stress in this way, you're not just getting better at stress, you're actually making a pretty profound statement. You're saying that you can trust yourself to handle life's challenges. And you're remembering that you don't have to face them alone.

Unit 6

VIDEO TRACK 1.31 9:59 min

Part 2, Page 116, Exercise G, Watch for Main Ideas

Ten years ago, I had my first exhibition here. I had no idea if it would work or was at all possible, but with a few small steps and a very steep learning curve, I made my first sculpture, called "The Lost Correspondent." Teaming up with a marine biologist and a local dive center, I submerged the work off the coast of Grenada, in an area decimated by Hurricane Ivan. And then this incredible thing happened. It transformed. One sculpture became two. Two quickly became 26. And before I knew it, we had the world's first underwater sculpture park.

In 2009, I moved to Mexico and started by casting local fisherman. This grew to a small community, to almost an entire movement of people in defense of the sea. And then finally, to an underwater museum, with over 500 living sculptures. Gardening, it seems, is not just for greenhouses. We've since scaled up the designs: "Ocean Atlas," in the Bahamas, rising 16 feet up to the surface and weighing over 40 tons, to now currently in Lanzarote, where I'm making an underwater botanical garden, the first of its kind in the Atlantic Ocean.

Each project, we use materials and designs that help encourage life; a long-lasting pH-neutral cement provides a stable and permanent platform. It is textured to allow coral polyps to attach. We position them down current from natural reefs so that after spawning, there's areas for them to settle. The formations are all configured so that they aggregate fish on a really large scale. Even this VW Beetle has an internal living habitat to encourage crustaceans such as lobsters and sea urchins.

So why exhibit my work in the ocean? Because honestly, it's really not easy. When you're in the middle of the sea under a hundred-foot crane, trying to lower eight tons down to the sea floor, you start to wonder whether I shouldn't have taken up watercolor painting instead.

(Laughter)

But in the end, the results always blow my mind.

(Music)

The ocean is the most incredible exhibition space an artist could ever wish for. You have amazing lighting effects

changing by the hour, explosions of sand covering the sculptures in a cloud of mystery, a unique timeless quality and the procession of inquisitive visitors, each lending their own special touch to the site.

(Music)

But over the years, I've realized that the greatest thing about what we do, the really humbling thing about the work, is that as soon as we submerge the sculptures, they're not ours anymore, because as soon as we sink them, the sculptures, they belong to the sea. As new reefs form, a new world literally starts to evolve, a world that continuously amazes me.

Sponges look like veins across the faces. Staghorn coral morphs the form. Fireworms scrawl white lines as they feed. Tunicates explode from the faces. Sea urchins crawl across the bodies feeding at night. Coralline algae applies a kind of purple paint. The deepest red I've ever seen in my life lives underwater. Purple sponges breathe water like air. And grey angelfish glide silently overhead.

And the amazing response we've had to these works tells me that we've managed to plug into something really primal, because it seems that these images translate across the world, and that's made me focus on my responsibility as an artist and about what I'm trying to achieve. I'm standing here today on this boat in the middle of the ocean, and this couldn't be a better place to talk about the really, really important effect of my work. Because as we all know, our reefs are dying, and our oceans are in trouble.

So here's the thing: the most used, searched and shared image of all my work thus far is this. And I think this is for a reason, or at least I hope it is. What I really hope is that people are beginning to understand that when we think of the environment and the destruction of nature, that we need to start thinking about our oceans, too.

Since building these sites, we've seen some phenomenal and unexpected results. Besides creating over 800 square meters of new habitats and living reef, visitors to the marine park in Cancun now divide half their time between the museum and the natural reefs, providing significant rest for natural, overstressed areas. The sculpture park in Grenada was instrumental in the government designating a spot—a marine-protected area. Entrance fees to the park now help fund park rangers to manage tourism and fishing quotas. The site was actually listed as a "Wonder of the World" by National Geographic.

So why are we all here today in this room? What do we all have in common? I think we all share a fear that we don't protect our oceans enough. And one way of thinking about this is that we don't regard our oceans as sacred, and we should. When we see incredible places—like the Himalayas or the La Sagrada Família, or the Mona Lisa, even—when we see these incredible places and things, we understand their importance. We call them sacred, and we do our best to cherish them, to protect them and to keep them safe. But in order to do that, we are the ones that have to assign that value; otherwise, it will be desecrated by someone who doesn't understand that value.

So I want to finish up tonight by talking about sacred things. When we were naming the site in Cancun, we named it a museum for a very important and simple reason: museums are places of preservation, of conservation and of education. They're places where we keep objects of great value to us, where we simply treasure them for them being themselves. If someone was to throw an egg at the Sistine Chapel, we'd all go crazy. If someone wanted to build a seven-star hotel

at the bottom of the Grand Canyon, then we would laugh them out of Arizona. Yet every day we dredge, pollute and overfish our oceans. And I think it's easier for us to do that, because when we see the ocean, we don't see the havoc we're wreaking. Because for most people, the ocean is like this. And it's really hard to think of something that's just so plain and so enormous, as fragile. It's simply too massive, too vast, too endless. And what do you see here? I think most people actually look past to the horizon. So I think there's a real danger that we never really see the sea [. . .]

We want to team up with other inventors, creators, philanthropists, educators, biologists, to see better futures for our oceans. And we want to see beyond sculpture, beyond art, even.

Say you're a 14-year-old kid from the city, and you've never seen the ocean. And instead of getting taken to the natural history museum or an aquarium, you get taken out to the ocean, to an underwater Noah's Ark, which you can access through a dry-glass viewing tunnel, where you can see all the wildlife of the land be colonized by the wildlife of the ocean. Clearly, it would blow your mind.

So let's think big and let's think deep. Who knows where our imagination and willpower can lead us? I hope that by bringing our art into the ocean, that not only do we take advantage of amazing creativity and visual impact of the setting, but that we are also giving something back, and by encouraging new environments to thrive, and in some way opening up a new—or maybe it's a really old way of seeing the seas: as delicate, precious places, worthy of our protection.

Our oceans are sacred.

Thank you.

(Applause)

VIDEO TRACK 1.32 4:32 min

Page 117, Exercise H, Watch for Details

Segment 1

Ten years ago, I had my first exhibition here. I had no idea if it would work or was at all possible, but with a few small steps and a very steep learning curve, I made my first sculpture, called "The Lost Correspondent." Teaming up with a marine biologist and a local dive center, I submerged the work off the coast of Grenada, in an area decimated by Hurricane Ivan. And then this incredible thing happened. It transformed. One sculpture became two. Two quickly became 26. And before I knew it, we had the world's first underwater sculpture park.

Segment 2

In 2009, I moved to Mexico and started by casting local fisherman. This grew to a small community, to almost an entire movement of people in defense of the sea. And then finally, to an underwater museum, with over 500 living sculptures. Gardening, it seems, is not just for greenhouses. We've since scaled up the designs: "Ocean Atlas," in the Bahamas, rising 16 feet up to the surface and weighing over 40 tons, to now currently in Lanzarote, where I'm making an underwater botanical garden, the first of its kind in the Atlantic Ocean.

Segment 3

Each project, we use materials and designs that help encourage life; a long-lasting pH-neutral cement provides a stable and permanent platform. It is textured to allow

coral polyps to attach. We position them down current from natural reefs so that after spawning, there's areas for them to settle. The formations are all configured so that they aggregate fish on a really large scale. Even this VW Beetle has an internal living habitat to encourage crustaceans such as lobsters and sea urchins.

Segment 4

And one way of thinking about this is that we don't regard our oceans as sacred, and we should. When we see incredible places—like the Himalayas or the La Sagrada Família, or the Mona Lisa, even—when we see these incredible places and things, we understand their importance. We call them sacred, and we do our best to cherish them, to protect them and to keep them safe. But in order to do that, we are the ones that have to assign that value; otherwise, it will be desecrated by someone who doesn't understand that value.

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VIDEO TRACK 1.33 3:07 min

Page 117, Exercise I, Expand Your Vocabulary

"I had no idea if it would work or was at all possible, but with a few small steps and a very **steep learning curve**, I made my first sculpture, called 'The Lost Correspondent.'"

1. What does **steep learning curve** mean?

- a. demanding learning process
- b. school learning process
- c. unsuccessful learning process

"Teaming up with a marine biologist and a local dive center, I submerged the work off the coast of Grenada, in an area decimated by Hurricane Ivan."

2. What does **teaming up with** mean?

- a. competing against
- b. looking for
- c. working with

"When you're in the middle of the sea under a hundred-foot crane, trying to lower eight tons down to the sea floor, you start to wonder whether I shouldn't have **taken up** watercolor painting instead."

3. What does **take up** mean?

- a. begin to do as a hobby
- b. give up something you enjoy
- c. lift

"But in the end, the results always **blow my mind**."

4. What does blow my mind mean?

- a. amaze me
- b. be hard to understand
- c. be as good as expected

"And the amazing response we've had to these works tells me that we've managed to **plug into** something really primal, because it seems that these images translate across the world."

5. What does plug into mean?

- a. connect to
- b. remember
- c. invent

"And I think it's easier for us to do that, because when we see the ocean, we don't see the **havoc we're wreaking**."

6. What does the havoc we're wreaking mean?

- a. the problems we are causing
- b. the sea life on the ocean floor
- c. the storms below the ocean's surface

Unit 7

VIDEO TRACK 1.34 15:27 min

Part 2, Pages 137 and 138, Exercise F, Watch for Main Ideas

Segment 1

What is going to be the future of learning?

I do have a plan, but in order for me to tell you what that plan is, I need to tell you a little story, which kind of sets the stage.

I tried to look at where did the kind of learning we do in schools, where did it come from? And you know you can look far back into the past, but if you look at present-day schooling the way it is, it's quite easy to figure out where it came from. It came from about 300 years ago, and it came from the last and the biggest of the empires on this planet. Imagine trying to run the show, trying to run the entire planet, without computers, without telephones, with data handwritten on pieces of paper, and traveling by ships. But the Victorians actually did it. What they did was amazing. They created a global computer made up of people. It's still with us today. It's called the bureaucratic administrative machine. In order to have that machine running, you need lots and lots of people. They made another machine to produce those people: the school. The schools would produce the people who would then become parts of the bureaucratic administrative machine. They must be identical to each other. They must know three things: They must have good handwriting, because the data is handwritten; they must be able to read; and they must be able to do multiplication, division, addition and subtraction in their head. They must be so identical that you could pick one up from New Zealand and ship them to Canada and he would be instantly functional. The Victorians were great engineers. They engineered a system that was so robust that it's still with us today, continuously producing identical people for a machine that no longer exists. The empire is gone, so what are we doing with that design that produces these identical people, and what are we going to do next if we ever are going to do anything else with it?

[“Schools as we know them are obsolete”]

So that's a pretty strong comment there. I said schools as we know them now, they're obsolete. I'm not saying they're broken. It's quite fashionable to say that the education system's broken. It's not broken. It's wonderfully constructed. It's just that we don't need it anymore. It's outdated. What are the kind of jobs that we have today? Well, the clerks are the computers. They're there in thousands in every office. And you have people who guide those computers to do their clerical jobs. Those people don't need to be able to write beautifully by hand. They don't need to be able to multiply numbers in their heads. They do need to be able to read. In fact, they need to be able to read discerningly.

Well, that's today, but we don't even know what the jobs of the future are going to look like. We know that people will work from wherever they want, whenever they want, in whatever way they want. How is present-day schooling going to prepare them for that world?

Segment 2

Well, I bumped into this whole thing completely by accident. I used to teach people how to write computer programs in New Delhi, 14 years ago. And right next to where I used to work, there was a slum. And I used to think, how on Earth are those kids ever going to learn to write computer programs? Or should they not? At the same time, we also had lots of parents, rich people, who had computers, and who used to tell me, "You know, my son, I think he's gifted, because he does wonderful things with computers. And my daughter—oh, surely she is extra-intelligent." And so on. So I suddenly figured that, how come all the rich people are having these extraordinarily gifted children? (Laughter) What did the poor do wrong? I made a hole in the boundary wall of the slum next to my office, and stuck a computer inside it just to see what would happen if I gave a computer to children who never would have one, didn't know any English, didn't know what the Internet was.

The children came running in. It was three feet off the ground, and they said, "What is this?"

And I said, "Yeah, it's, I don't know." (Laughter)

They said, "Why have you put it there?"

I said, "Just like that."

And they said, "Can we touch it?" I said, "If you wish to."

And I went away. About eight hours later, we found them browsing and teaching each other how to browse. So I said, "Well that's impossible, because—How is it possible? They don't know anything."

My colleagues said, "No, it's a simple solution. One of your students must have been passing by, showed them how to use the mouse."

So I said, "Yeah, that's possible."

So I repeated the experiment. I went 300 miles out of Delhi into a really remote village where the chances of a passing software development engineer was very little. (Laughter) I repeated the experiment there. There was no place to stay, so I stuck my computer in, I went away, came back after a couple of months, found kids playing games on it.

When they saw me, they said, "We want a faster processor and a better mouse."

(Laughter)

So I said, "How on Earth do you know all this?"

And they said something very interesting to me. In an irritated voice, they said, "You've given us a machine that works only in English, so we had to teach ourselves English in order to use it." (Laughter) That's the first time, as a teacher, that I had heard the word "teach ourselves" said so casually.

Here's a short glimpse from those years. That's the first day at the Hole in the Wall. On your right is an eight-year-old. To his left is his student. She's six. And he's teaching her how to browse. Then onto other parts of the country, I repeated this over and over again, getting exactly the same results everywhere. ["Hole in the wall film—1999"] An eight-year-old telling his elder sister what to do. And finally a girl explaining in Marathi what it is, and said, "There's a processor inside."

Segment 3

So I started publishing. I published everywhere. I wrote down and measured everything, and I said, in nine months, a group of children left alone with a computer in any language will reach the same standard as an office secretary in the West. I'd seen it happen over and over and over again.

So then people said, well, how far will it go? Where does it stop? I decided I would destroy my own argument by creating an absurd proposition. I made a hypothesis, a ridiculous hypothesis. Tamil is a south Indian language, and I said, can Tamil-speaking children in a south Indian village learn the biotechnology of DNA replication in English from a streetside computer? And I said, I'll measure them. They'll get a zero. I'll spend a couple of months, I'll leave it for a couple of months, I'll go back, they'll get another zero. I'll go back to the lab and say, we need teachers. I found a village. It was called Kallikuppam in southern India. I put in Hole in the Wall computers there, downloaded all kinds of stuff from the Internet about DNA replication, most of which I didn't understand.

The children came rushing, said, "What's all this?"

So I said, "It's very topical, very important. But it's all in English."

So they said, "How can we understand such big English words and diagrams and chemistry?"

So by now, I had developed a new pedagogical method, so I applied that. I said, "I haven't the foggiest idea." (Laughter) "And anyway, I am going away." (Laughter)

So I left them for a couple of months. They'd got a zero. I gave them a test. I came back after two months and the children trooped in and said, "We've understood nothing."

So I said, "Well, what did I expect?" So I said, "Okay, but how long did it take you before you decided that you can't understand anything?"

So they said, "We haven't given up. We look at it every single day."

So I said, "What? You don't understand these screens and you keep staring at it for two months? What for?"

So a little girl who you see just now, she raised her hand, and she says to me in broken Tamil and English, she said, "Well, apart from the fact that improper replication of the DNA molecule causes disease, we haven't understood anything else."

(Laughter) (Applause)

So I tested them. I got an educational impossibility, zero to 30 percent in two months in the tropical heat with a computer under the tree in a language they didn't know

doing something that's a decade ahead of their time. Absurd. But I had to follow the Victorian norm. Thirty percent is a fail. How do I get them to pass? I have to get them 20 more marks. I couldn't find a teacher. What I did find was a friend that they had, a 22-year-old girl who was an accountant and she played with them all the time.

So I asked this girl, "Can you help them?"

So she says, "Absolutely not. I didn't have science in school. I have no idea what they're doing under that tree all day long. I can't help you."

I said, "I'll tell you what. Use the method of the grandmother."

So she says, "What's that?"

I said, "Stand behind them. Whenever they do anything, you just say, 'Well, wow, I mean, how did you do that? What's the next page? Gosh, when I was your age, I could have never done that.' You know what grannies do."

So she did that for two more months. The scores jumped to 50 percent. Kallikuppam had caught up with my control school in New Delhi, a rich private school with a trained biotechnology teacher. When I saw that graph I knew there is a way to level the playing field.

Here's Kallikuppam.

(Children speaking) Neurons . . . communication.

I got the camera angle wrong. That one is just amateur stuff, but what she was saying, as you could make out, was about neurons, with her hands were like that, and she was saying neurons communicate. At 12.

Segment 4

I came back to England looking for British grandmothers. I put out notices in papers saying, if you are a British grandmother, if you have broadband and a web camera, can you give me one hour of your time per week for free? I got 200 in the first two weeks. I know more British grandmothers than anyone in the universe. (Laughter) They're called the Granny Cloud. The Granny Cloud sits on the Internet. If there's a child in trouble, we beam a Gran. She goes on over Skype and she sorts things out. I've seen them do it from a village called Diggles in northwestern England, deep inside a village in Tamil Nadu, India, 6,000 miles away. She does it with only one age-old gesture. "Shhh." Okay?

Watch this.

Grandmother: You can't catch me. You say it. You can't catch me.

Children: You can't catch me.

Grandmother: I'm the Gingerbread Man. Children: I'm the Gingerbread Man.

Grandmother: Well done! Very good.

Segment 5

So what's happening here? I think what we need to look at is we need to look at learning as the product of educational self-organization. If you allow the educational process to self-organize, then learning emerges. It's not about making learning happen. It's about letting it happen. The teacher sets the process in motion and then she stands back in awe and watches as learning happens. I think that's what all this is pointing at.

But how will we know? How will we come to know? Well, I intend to build these Self-Organized Learning Environments.

They are basically broadband, collaboration and encouragement put together.

So here are a couple of images from SOLEs. I've tried incredible, incredible questions—"When did the world begin? How will it end?"—to nine-year-olds. This one is about what happens to the air we breathe. This is done by children without the help of any teacher. The teacher only raises the question, and then stands back and admires the answer.

So what's my wish? My wish is that we design the future of learning. We don't want to be spare parts for a great human computer, do we? So we need to design a future for learning. And I've got to—hang on, I've got to get this wording exactly right, because, you know, it's very important. My wish is to help design a future of learning by supporting children all over the world to tap into their wonder and their ability to work together. Help me build this school. It will be called the School in the Cloud.

VIDEO TRACK 1.35 7:42 min

Page 139, Exercise G, Watch for Details

Well, I bumped into this whole thing completely by accident. I used to teach people how to write computer programs in New Delhi, 14 years ago. And right next to where I used to work, there was a slum. And I used to think, how on Earth are those kids ever going to learn to write computer programs? Or should they not? At the same time, we also had lots of parents, rich people, who had computers, and who used to tell me, "You know, my son, I think he's gifted, because he does wonderful things with computers. And my daughter—oh, surely she is extra-intelligent." And so on. So I suddenly figured that, how come all the rich people are having these extraordinarily gifted children? (Laughter) What did the poor do wrong? I made a hole in the boundary wall of the slum next to my office, and stuck a computer inside it just to see what would happen if I gave a computer to children who never would have one, didn't know any English, didn't know what the Internet was.

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VIDEO TRACK 1.36 3:16 min

Page 139, Exercise H, Expand Your Vocabulary

"I do have a plan, but in order for me to tell you what that plan is, I need to tell you a little story, which kind of **sets the stage**."

1. What does **set the stage** mean?

- a. gets you ready for
- b. gives you a summary of
- c. helps you make a plan for

"Imagine trying to **run the show**, trying to run the entire planet, without computers, without telephones, with data handwritten on pieces of paper, and traveling by ships."

2. What does **run the show** mean?

- a. keep a record of everything that happens
- b. run away from all of your responsibilities
- c. be responsible for and in control of everything

"So I said, "**How on Earth** do you know all this?"

3. What does **how on Earth** mean?

- a. How much is it?
- b. How is it possible?
- c. Where is it from?

"So by now, I had developed a new pedagogical method, so I applied that. I said, "**I haven't the foggiest idea**."

4. What does **not have the foggiest idea** mean?

- a. be uncertain
- b. feel absolutely clear
- c. have absolutely no idea

"I got an educational impossibility, zero to 30 percent in two months in the tropical heat with a computer under the tree in a language they didn't know doing something that's a decade **ahead of their time**."

5. What does **ahead of (one's) time** mean?

- a. arriving too early
- b. more advanced than others
- c. moving too fast

"We don't want to be **spare parts** for a great human computer, do we?"

6. What does **spare parts** mean?

- a. extra parts to use when the original ones break
- b. small and insignificant pieces
- c. very important parts

VIDEO TRACK 1.37 0:53 min

Page 140, Presentation Skill: Show Enthusiasm for Your Topic

It came from about 300 years ago, and it came from the last and the biggest of the empires on this planet. Imagine trying to run the show, trying to run the entire planet, without computers, without telephones, with data handwritten on pieces of paper, and traveling by ships. But the Victorians actually did it. What they did was amazing. They created a global computer made up of people. It's still with us today. It's called the bureaucratic administrative machine.

So that's a pretty strong comment there. I said schools as we know them now, they're obsolete. I'm not saying they're broken. It's quite fashionable to say that the education system's broken. It's not broken. It's wonderfully constructed. It's just that we don't need it anymore. It's outdated. What are the kind of jobs that we have today? Well, the clerks are the computers. They're there in thousands in every office. And you have people who guide those computers to do their clerical jobs. Those people don't need to be able to write beautifully by hand. They don't need to be able to multiply numbers in their heads. They do need to be able to read. In fact, they need to be able to read discerningly.

Unit 8

VIDEO TRACK 1.38 5:40 min

Part 1, Pages 147 and 148, Exercise E, Listen for Main Ideas

PROFESSOR Good afternoon. To start today's class, I have some questions for you.

First, have you ever done a "Do It Yourself," or DIY project? Even a simple one like assembling a piece of furniture? So . . . more than half of you.

Next question: Do you watch a DIY program? You know, those shows where people rebuild their house over a weekend? OK, about three quarters of you.

Finally, have you ever bought something from a website where you can design your own product, for example sneakers, jeans, or cell-phone cover? Hmm, so a lot of you have done that, too.

So, would you agree that DIY is pretty popular these days?

In fact, DIY has become incredibly popular. And businesses, who have already made a lot of money from DIY, see the potential for making even more—but only if they can maintain the interest of consumers. To find out if the current popularity of DIY products is sustainable, businesses hope to understand the psychology behind DIY—which is the subject of today's lecture.

Let's start with two research studies. The first study, done by business schools at one U.S. and one Chinese university, is about the link between busyness and happiness. Here's their first hypothesis: People are happier when they are busy than when they are idle.

Now, the second hypothesis: People will choose busyness over idleness, but only if they see a reason to be busy. The

reason doesn't have to be serious; they just need to have a reason. But without a reason, they will do nothing.

So . . . the first experiment involved a kind of DIY project with a bracelet.

First, the researchers divided the participants into two groups.

Second, they put each participant in a separate room with a bracelet in it. They didn't let them bring anything into the room—no cell phones, books, or paper.

All of the bracelets were identical and easy to take apart and put back together.

Next, they told the participants to stay in the room for 15 minutes.

Then they gave each participant a choice. They could do nothing for 15 minutes—or they could take the bracelet apart and put it back together again.

At that point in the experiment, the researchers gave each group a different version of the instructions.

If participants in group one took the bracelet apart, they had to put it back together in exactly the same way.

If participants in group two took the bracelet apart, they had to assemble it in a different way, by following instructions for a new design. Got that?

OK. Then the researchers left the participants alone for 15 minutes.

The results?

Most participants in group one did nothing. In contrast, most of the participants in group 2 worked on the bracelet. And interestingly, the participants from both groups who worked on the bracelet felt happier than those who did nothing.

So, the first hypothesis: People are happier when they are busy than when they are idle. Do the results support it? Yes?

FEMALE STUDENT Absolutely . . . the participants who worked on the bracelet were busy and happier.

PROFESSOR Good . . . so now the second hypothesis: People will choose being busy over doing nothing, but only if they can see a reason for being busy.

So, do the results support this? Anyone? Go ahead.

MALE STUDENT 1 Yeah, for sure. The ones with a reason worked on the bracelet. The ones without a reason did nothing.

PROFESSOR And why did they work on it?

MALE STUDENT 2 To change the design.

PROFESSOR OK, good. So now we have one possible reason why DIY projects are popular: they give people a reason to be busy.

Now for the second study, which involved origami. Origami is the Japanese art of folding paper into different shapes, often of animals, such as birds, fish, or insects. Origami experts are true artists, but anyone can follow instructions to make simple origami.

In the experiment, the participants, who were not experts, made origami frogs. Next, they were asked to value their frogs. Finally, they had to value the frogs made by experts. The results?

They valued their own frogs either the same or higher than the frogs made by experts . . . and they were sure that others would agree with them. But others did not agree—they valued the origami made by experts more.

This experiment gives us another explanation for the popularity of DIY projects. People tend to prefer, and even overvalue, things they make themselves. Next week, we will discuss the implications of these study results for the DIY industry.

VIDEO TRACK 1.39 4:10 min

Part 2, Page 155, Exercise F, Watch for Main Ideas

Hi, my name is Marcin—farmer, technologist. I was born in Poland, now in the U.S. I started a group called Open Source Ecology. We've identified the 50 most important machines that we think it takes for modern life to exist—things from tractors, bread ovens, circuit makers. Then we set out to create an open source, DIY, do it yourself version that anyone can build and maintain at a fraction of the cost. We call this the Global Village Construction Set.

So let me tell you a story. So I finished my 20s with a Ph.D. in fusion energy, and I discovered I was useless. I had no practical skills. The world presented me with options, and I took them. I guess you can call it the consumer lifestyle. So I started a farm in Missouri and learned about the economics of farming. I bought a tractor—then it broke. I paid to get it repaired—then it broke again. Then pretty soon, I was broke too.

I realized that the truly appropriate, low-cost tools that I needed to start a sustainable farm and settlement just didn't exist yet. I needed tools that were robust, modular, highly efficient and optimized, low-cost, made from local and recycled materials that would last a lifetime, not designed for obsolescence. I found that I would have to build them myself. So I did just that. And I tested them. And I found that industrial productivity can be achieved on a small scale.

So then I published the 3D designs, schematics, instructional videos and budgets on a wiki. Then contributors from all over the world began showing up, prototyping new machines during dedicated project visits. So far, we have prototyped eight of the 50 machines. And now the project is beginning to grow on its own.

We know that open source has succeeded with tools for managing knowledge and creativity. And the same is starting to happen with hardware too. We're focusing on hardware because it is hardware that can change people's lives in such tangible material ways. If we can lower the barriers to farming, building, manufacturing, then we can unleash just massive amounts of human potential.

That's not only in the developing world. Our tools are being made for the American farmer, builder, entrepreneur, maker. We've seen lots of excitement from these people, who can now start a construction business, parts manufacturing, organic CSA or just selling power back to the grid. Our goal is a repository of published designs so clear, so complete, that a single burned DVD is effectively a civilization starter kit.

I've planted a hundred trees in a day. I've pressed 5,000 bricks in one day from the dirt beneath my feet and built a tractor in six days. From what I've seen, this is only the beginning.

If this idea is truly sound, then the implications are significant. A greater distribution of the means of production, environmentally sound supply chains, and a newly relevant DIY maker culture can hope to transcend artificial scarcity. We're exploring the limits of what we all can do to make a better world with open hardware technology.

Thank you.

VIDEO TRACK 1.40 3:48 min

Pages 156 and 157, Exercise G, Watch for Details

Segment 1 (repeated)

Hi, my name is Marcin—farmer, technologist. I was born in Poland, now in the U.S. I started a group called Open Source Ecology. We've identified the 50 most important machines that we think it takes for modern life to exist—things from tractors, bread ovens, circuit makers.

Segment 2 (repeated)

I realized that the truly appropriate, low-cost tools that I needed to start a sustainable farm and settlement just didn't exist yet. I needed tools that were robust, modular, highly efficient and optimized, low-cost, made from local and recycled materials that would last a lifetime, not designed for obsolescence.

Segment 3 (repeated)

So then I published the 3D designs, schematics, instructional videos and budgets on a wiki.

Segment 4 (repeated)

If we can lower the barriers to farming, building, manufacturing, then we can unleash just massive amounts of human potential.

Segment 5 (repeated)

That's not only in the developing world. Our tools are being made for the American farmer, builder, entrepreneur, maker. We've seen lots of excitement from these people, who can now start a construction business, parts manufacturing, organic CSA or just selling power back to the grid.

VIDEO TRACK 1.41 2:27 min

Page 157, Exercise I

Segment 1

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Segment 2

So I started a farm in Missouri and learned about the economics of farming. I bought a tractor—then it broke. I paid to get it repaired—then it broke again. Then pretty soon, I was broke too.

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Segment 3

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prototyping new machines during dedicated project visits. So far, we have prototyped eight of the 50 machines. And now the project is beginning to grow on its own.

VIDEO TRACK 1.42 3:01 min

Page 157, Exercise K, Expand Your Vocabulary

"We've identified the 50 most important machines that we think it takes for modern life to exist—things from tractors, bread ovens, circuit makers. Then we set out to create an open source, DIY, do it yourself version that anyone can build and maintain at **a fraction of the cost**."

1. What does **a fraction of the cost** mean?

- a. a small amount in comparison to the original cost
- b. an identical amount to the original cost
- c. just a little bit less than the original cost

"So I started a farm in Missouri and learned about the economics of farming. I bought a tractor—then it broke. I paid to get it repaired—then it broke again. Then pretty soon, I **was broke** too."

2. What does **be broke** mean?

- a. be broken
- b. be hopeless
- c. to have no more money

"Then contributors from all over the world began **showing up**, prototyping new machines during dedicated project visits. So far, we have prototyped eight of the 50 machines. And now the project is beginning to grow on its own."

3. What does **show up** mean?

- a. arrive, sometimes unexpectedly
- b. present something
- c. send information

"If we can lower the barriers to farming, building, manufacturing, then we can **unleash** just massive amounts of human potential."

4. What does **unleash** mean?

- a. create
- b. eliminate
- c. release; set free

"A greater distribution of the means of production, environmentally sound **supply chains**, and a newly relevant DIY maker culture can hope to transcend artificial scarcity."

5. What is a **supply chain**?

- a. an interconnected group of restaurants and stores
- b. a system for moving products from the original producer to the end user
- c. a system that could lead to a scarcity of products

VIDEO TRACK 1.43 1:00 min

Page 160, Exercise B

I found that I would have to build them myself. So I did just that. And I tested them. And I found that industrial productivity can be achieved on a small scale.

So then I published the 3D designs, schematics, instructional videos and budgets on a wiki. Then contributors from all over the world began showing up, prototyping new machines during dedicated project visits. So far, we have prototyped eight of the 50 machines. And now the project is beginning to grow on its own.