

2 DESIGN

- LISTENING 1** Inferring from context
- LISTENING 2** Listening for key terms and definitions
- STUDY SKILL** Creative problem solving: difficulties finding a solution?
- VOCABULARY** Design vocabulary
- GRAMMAR** *wish* when referring to present or future time
- SPEAKING** Talking about problems and solutions

Warm-up

Tell students to close their books. Write the word “*design*” on the board. Use these questions to generate a discussion with the class:

- 1 What is the difference between art and design? **Possible answer:** *Art is about creating visual impact (e.g., something beautiful, shocking, or thought-provoking). Design involves a combination of visual impact and usefulness (e.g., something that looks amazing and also works brilliantly).*
- 2 What are some examples of things that are designed? **Possible answers:** *cars, clothes, websites, books.*
- 3 What are some examples of good design? What is good about them?

Discussion point

Go through the infographic with the class. Point out that some of the words are explained in the glossary. For each numbered principle, check meaning by eliciting examples of products that meet or don't meet the criteria (e.g., the first smartphones were highly innovative, but later models were just slight improvements on existing technology, so they were less innovative). Check pronunciation, especially *aesthetic* /ɛ'sθetɪk/, *honest* /'ɒnəst/, *innovative* /'ɪnəveɪtɪv/, *thorough* /'θʊərə/ and *unobtrusive* /,ʌnəb'trusɪv/.

Students work in pairs to discuss the three questions. At the end, open up the discussion to include the whole class.

Extension activity

Elicit who Dieter Rams might be and why he created his ten principles. Students are unlikely to know any details, but they should be able to guess some information. **Answer:** *Dieter Rams (born 1932) is a German industrial designer and academic. He formulated his ten principles in the 1970s as a way of deciding whether his own designs were good enough.*

VIDEO

Before you watch

- 1 Check that everyone understands the meaning of VR (= virtual reality). Students work alone to complete the sentences, using dictionaries if necessary, and check in pairs. Go through the answers carefully with the class to make sure everyone understands all the words.

ANSWERS

- 1 headsets 2 gadget 3 gimmicky 4 kit

Extension activity

Use these questions with the class to check everyone understands the target vocabulary:

- 1 How do VR headsets work?
- 2 What are some other examples of gadgets?
- 3 Why do people buy gimmicky products?
- 4 What kit do you need for VR?

Possible answers: 1 *They have screens in front of your eyes, so it feels like you're seeing something real. The headset can tell when you move your head, so the view changes to match where you're looking.*; 2 *The latest electronic devices and toys*; 3 *Because they are "cool", perhaps as a result of expensive marketing, or they look great, but they might not be very useful.*; 4 *A headset, a powerful computer (or smartphone), plus possibly a handset, etc.*

- 2 Students work in pairs to discuss the statements. After a few minutes, open up the discussion to include the whole class.

While you watch

Go through the five statements with the class. Check everyone understands *default* (= normal, standard, basic) and *base station* (= a powerful computer or electronic device that other smaller devices connect to). Then play the video for students to complete the task. Ask students to check in pairs then check as a class.

ANSWERS

- 1 F (It's held once a year.)
- 2 T
- 3 F (It comes with two base stations.)
- 4 T
- 5 F (It's predicted that 97 million headsets will have been sold by 2020.)

See page 107 for the video script.

After you watch

Students work in pairs to discuss the three questions. After a few minutes, open up the discussion to include the whole class.

LISTENING 1

Principles of good design

A Vocabulary preview

- 1 Students work alone to match the words and definitions. Ask students to check in pairs then check as a class.

ANSWERS

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

- 2 Students work alone to complete the sentences. Ask students to check in pairs then check as a class.

ANSWERS

1 complex 2 device 3 figure out 4 features
5 come up with 6 measure 7 operate 8 functional

- 3 Students discuss the statements in pairs. Encourage them to justify their answers with reasons and examples where possible. When they are ready, open up the discussion to include the whole class.

B Before you listen

Activating prior knowledge

Students discuss the questions in small groups. They could use Dieter Rams's principles to evaluate the four designs. When they are ready, ask volunteers to share their ideas with the class. Avoid confirming or rejecting their suggestions.

C Global listening

Listening for text organization

- 1 Draw students' attention to the information in the glossary box. Then play the recording for students to number the products. Ask students to check in pairs then check as a class.

AUDIO SCRIPT

Track 2.1

MARTA: Jack! Over here!

JACK: Oh, hey Marta. How's it going?

MARTA: OK ... I just went to Professor Malik's office to ask about the assignment for the class I missed. He says we're supposed to evaluate a product using the design principles of Dieter Rams. Who is he? I'm kind of behind on the reading for that class.

JACK: Again? OK well, he's a German industrial designer who used to work for Braun, you know, the consumer products company? Back in the 1970s, he came up with ten principles of good design that are still being followed today. Like, for example, a good design is innovative, long-lasting, environmentally friendly ... And the most important one, I think, is that it should make the product understandable. He doesn't believe in designs that have a lot of unnecessary features. You know the classic Braun calculator? Rams designed that and you can see the influence in the iPhone calculator today.

MARTA: Really? I think my dad has one of those calculators – they're ancient. He's not very good with technology, so I guess it must be fairly "understandable!" Ha-ha! Anyway, have you chosen a product to evaluate for the assignment yet?

JACK: Yeah. A door.

MARTA: A door?

JACK: Yeah. The door to the college library, to be exact. Look, here's a photo ... Can you see the problem?

MARTA: Um ... no. Not really.

JACK: Look at the handle. Are you supposed to pull or push it?

MARTA: Well ... hmm. It's not clear.

JACK: See, that's the problem. It's not clear. The handle is vertical, so naturally you want to pull on it. But that's not how it works. You have to push. Dieter Rams would say it's not understandable. Therefore ... it's a bad design.

MARTA: That's so interesting. I'd never have thought of that.

JACK: I found out that there's actually a name for badly designed doors. They're called "Norman doors," after Don Norman, who wrote a book called *The Design of Everyday Things*. He believes in what he calls "designing for humans," which is similar to Dieter Rams's principle that products should be understandable. Norman says doors are really simple devices. We shouldn't need written instructions like "pull" or "push" to figure out what to do—it should be obvious from the design.

MARTA: I completely agree with him. I wish all products were designed like that.

JACK: Especially electronic devices, like phones or tablets ...

MARTA: No kidding! My parents need a set of written instructions to use the TV remote!

JACK: Ha-ha! Yeah, mine can't operate the microwave ...

MARTA: Well, to be fair, I got a new coffee machine a few months ago, and I still don't really understand how to use it. It's got lots of great features, but I seem to spend more time reading the instruction manual than I do drinking the coffee.

JACK: Yeah, that's just bad design. Complex equipment doesn't need to be difficult to use.

MARTA: True. Argh ... what am I going to evaluate for this assignment?

JACK: Try to think of something that is attractive, but also functional.

MARTA: Yeah, I need something simple ... Oh, how about the glass measuring jug you use in the kitchen? You know the thing that has ounces and milliliters printed on the side so you can measure liquids or dry foods like rice?

JACK: Well, it's certainly useful ...

MARTA: Right, and I'm sure Rams would agree it's "understandable." It's not like you need instructions to use it.

JACK: True. Also, it pioneered the use of a new heat-proof glass so you could say it was 'innovative' at the time and the design hasn't changed for at least 100 years, so I guess you could argue it's "long-lasting" too.

MARTA: Definitely.

JACK: Well it sounds like you've found a product for the assignment. Let me know if you need any help with anything.

MARTA: I will do. Thanks, Jack.

ANSWERS

- 1 the Braun calculator 2 Norman doors
3 TV remotes 4 microwaves
5 coffee machines 6 measuring jugs

- 2 Check that everyone understands the word *vertical* (= in an up-down direction). Play the recording again for students to complete the sentences. Ask students to check in pairs then check as a class.

AUDIO SCRIPT

Track 2.1

ANSWERS

- 1 c 2 b 3 a 4 b 5 c

D Close listening

Inferring from context

Warm-up

Tell students to close their books. Elicit the meaning of the verb *to infer* (= to guess something based on evidence). On the board, write the sentence, "That's the worst design I've seen all semester". Elicit from the class what we can infer about the speaker just from this sentence. **Possible answers:** *He / she speaks English; he / she might be a student or a teacher at a university; he / she knows about design; and perhaps spends a lot of time looking at / thinking about designs; he / she might not be very friendly.* Discuss why "inferring from context" might be a useful skill. Then tell them to read the information in the box to compare it with their ideas.

Exam skills

The IELTS listening exam focuses mainly on clear facts, but it might include a few multiple-choice questions where students have to infer information from context. In the TOEFL exam, however, inferring from context is a key skill. The exam includes the following listening question types:

- Gist-Purpose (= working out why somebody did something)
- Understanding the Function of What Is Said
- Understanding the Speaker's Attitude

Tell students to read the questions to try to work out the answers. Then play the recording again for them to check. Go through the answers with the class.

AUDIO SCRIPT

Track 2.1

ANSWERS

- 1 c 2 c 3 c 4 a

Extension activity

Students work in small groups to infer more information about Marta and Jack (and their parents). Play the recording again if necessary. When they are ready, discuss the answers with the class. **Possible answers:** *They are both students who attend the same class at university / college. Perhaps they are studying to become designers; They both think their parents aren't very good with technology; Marta probably doesn't live with her parents - she has just bought her own coffee machine. She might be quite rich (or else she loves good coffee); Jack is patient and helpful - he explains everything clearly to Marta and offers to help at the end.*

Extra research task

Tell students to find out more about Dieter Rams, Don Norman, or another important industrial designer. They could search the Internet for “industrial designers”. They work alone or in groups to produce a short presentation about their designer and some of his / her best designs. They complete the research task at home, and report back on their findings in the next lesson.

E Critical thinking

The three questions all develop the critical thinking skill of relating information that you have read / heard to their own experience. This is a good way of testing whether the source information is plausible and logical. Additionally, the tasks encourage students to think critically about everyday objects, and perhaps notice things about them that they never noticed before. Students work in small groups to discuss the three questions. After a few minutes, open up the discussion to include the whole class.

STUDY SKILLS

Creative problem-solving: difficulties finding a solution?

Warm-up

Tell students to close their books. Elicit a few examples of difficult problems that students might have (e.g., too many exams and not enough time to study; an essay to write on a subject you know nothing about; noisy roommates, etc.) Discuss whether anyone knows any general advice for solving problems (rather than specific advice about these particular problems). Then tell them to read the information in the box to compare it with their ideas.

You could go through the following problem-solving exercise with the class.

Problem: You have to prepare a 30-minute presentation about something that is badly designed, including your suggestions for improving the design.

- Remove unnecessary detail: As a starting point, we just need to think of something that is badly designed.
- Generalize: We’ve recently been looking at well-designed products, including Dieter Rams’ 10 Principles of Good Design. Maybe that list will give us some ideas.
- Make broad assumptions: We’re probably looking for something that everybody would agree is completely badly-designed, not just something that might benefit from slight improvement.

- Take a different angle: Maybe we shouldn’t think in terms of products. Could we describe a badly-designed building? Or a website? Or a process? Or a university course?
- Make it real: Do you have any badly-designed things in your bag? Are there any in this room? What did you last complain about?
- Combine the possibilities: The task also asks us to suggest improvements. Could we start with some general ways of improving products (e.g., making the batteries stronger, adding Wi-Fi, etc.)? That might give us some ideas.

Students work in pairs to discuss the three problems, using some of the techniques from the book. Monitor the activity and help with vocabulary where needed. When they are ready, ask volunteers to share their ideas with the class. You could vote on the most creative solutions for each problem.

Extension activity

Students work in groups to discuss some real problems (e.g., from the brainstorm in the Warm-up task above), and to come up with some creative solutions. When they are ready, ask volunteers to report back to the class.

LISTENING 2

VR and AR

A Vocabulary preview

Students work alone to complete the sentences, using dictionaries if necessary. Ask students to check in pairs then check as a class.

ANSWERS

- 1 similarity
- 2 Computer-generated
- 3 artificial
- 4 Feedback
- 5 simulation
- 6 layer
- 7 three-dimensional
- 8 train

Extension activity

Use these questions with the class to generate some additional discussion using the target vocabulary.

- 1 What are some examples of food that has layers?
Possible answers: sandwiches, burgers, some cakes, onions, etc.
- 2 When you’ve written an essay and your teacher gives it back, do you like to get detailed feedback on what you did wrong?
- 3 What are some examples of movies with computer-generated images?

- 4 What are some similarities between design and art?
- 5 Have you ever played a simulation game on a computer?
- 6 Do you work better in sunlight or artificial light?
- 7 What is the difference between teaching a person and training them? **Possible answer:** *They're very similar, but teaching is often where one person explains something to other people; training is more about giving the other person a chance to practice, and then providing feedback on that practice.*
- 8 Do you know the names of any three-dimensional shapes in English? **Possible answers:** *a sphere /sfi:ɹ/, a cube /kju:b/, a pyramid /'pɪrəmid/, a cone*

B Before you listen

Activating prior knowledge

Students work in pairs to discuss the two questions. After a few minutes, open up the discussion to include the whole class.

C Global listening

Listening for text organization

Go through the instructions carefully with the class. Play the recording for students to complete the outline. They check in pairs, including a brief discussion of what they remember about each point, and feed back to the class.

AUDIO SCRIPT

Track 2.2

Hello everyone. My name is Russell McGraw and I'm a member of a team that works to design virtual reality and augmented reality products, not just games but also products with practical uses in fields like medicine, science, and even fashion. A lot of people are confused by the terms "augmented reality" and "virtual reality," so what I want to do today is define these terms, explain the similarities and differences between them and give examples of some of their current and potential future applications.

Augmented reality and virtual reality have one major similarity, and that is that both are designed to alter our view of the world. However, the way they do it, and the technology they employ, are different.

Let me start by talking about augmented reality, or AR for short. AR has been in the news recently because of its use in the game Pokémon Go, which came out in 2016 and became a worldwide hit. To "augment" something means to add to it or increase it. For example, you can augment your income by taking a second job or working more hours. Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.

You view it through a device like a smartphone or a tablet. So, when people play Pokémon Go, they see the real environment around them, combined with artificial images of little monsters that players can interact with in all sorts of fun ways.

Now, in contrast, virtual reality is an artificial, computer-generated simulation—that means a copy—of a real-world environment. You enter the VR world via a specially designed headset like the one in this photo. The headset completely shuts out the real world and allows you to enter the virtual world. It feels real. The action takes place all around you, in 360 degrees, so you're encouraged to turn around, look around, and move around, like in the real world. The people and objects are three-dimensional and they appear life-size.

So, in short, while augmented reality places digital content in the real world, virtual reality is designed to take the viewer completely out of the real world. The two technologies are opposites in that way.

OK, until now, both technologies have been used successfully for entertainment and play. But more and more they're being used for practical purposes as well. Consider the field of aviation. Have you ever heard of a flight simulator? It's a machine for training pilots. It's designed exactly like a real airplane, and it has the ability to move in ways that simulate, or copy, the movement of an airplane as it takes off and lands, though of course it never actually leaves the ground. The pilot controls it just as he or she would a real plane. Virtual reality is used to create the landscape the pilot sees and to copy the kinds of messages and feedback that pilots normally receive. So, the simulator allows pilots to practice flying virtually in all kinds of weather, and to handle every sort of emergency safely and inexpensively.

In the medical field, augmented reality has been used to help students by layering a map of the bones and muscles onto a life-size, three-dimensional model of the human body. Also, virtual reality has been used to train surgeons in situations where it would be dangerous or difficult to operate on living people. And a very interesting use of augmented reality is in treating extreme fears called phobias. Let's say you have a person with arachnophobia, which is a fear of spiders. The normal treatment for phobias is to expose people to the thing they're afraid of in small, controlled amounts. But doctors don't usually keep jars of spiders in their offices. Virtual reality provides a practical substitute for the real thing.

Augmented reality also has many potential uses in the fashion industry. For example, today there are websites that allow you to upload a photo of yourself and then try on as many pairs of eyeglasses as you want. Soon there will be virtual dressing rooms and even virtual shopping malls. Someday soon there may be augmented cooking lessons, or car repair, or an augmented GPS system that's part of the car's windshield, so drivers can get directions at the same time as they're looking at the road.

I see we're running out of time, so to finish I'll mention some future developments in the areas of virtual and augmented reality. One is the addition of haptic feedback to the virtual reality environment. The term "haptic" is defined as "relating to the sense of touch," so let's say that for example someone touches you on the hand in your virtual world; in the real world using haptic feedback you'd actually be able to feel the touch. Amazing, right? The main development moving forward is that eventually augmented and virtual reality won't be separate experiences. Rather, they'll be combined to create a blended experience that has both real and artificial elements and that reduces the distance between real and digital worlds.

ANSWERS

- 1 similarity between AR / VR
- 2 definition – augmented reality
- 3 definition – virtual reality 4 aviation 5 medicine
- 6 fashion 7 haptic feedback
- 8 blended AR / VR experience

D Close listening

Listening for key terms and definitions

Warm-up

Tell students to close their books. Elicit from the class some examples of words and phrases that were defined in the listening (e.g., *haptic*). Elicit some useful phrases for signaling definitions. Then tell students to read the information in the box to compare it with their ideas.

- 1 Play the recording once or twice. Students complete the definitions with words from the box. Ask students to check in pairs then check as a class. Point out that many of the defined terms here are quite technical, so they don't need to learn them.

AUDIO SCRIPT

Track 2.3

- 1 To "augment" something means to add to it or increase it.
- 2 Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.
- 3 Virtual reality is an artificial, computer-generated simulation—that means a copy— of a real-world environment.
- 4 Let's say you have a person with arachnophobia, which is a fear of spiders.
- 5 The term "haptic" is defined as "relating to the sense of touch".

ANSWERS

- 1 Augment 2 Augmented reality 3 Virtual reality
- 4 arachnophobia 5 haptic

Extension activity

Tell students to look back at Dieter Rams' principles on page 26. They take turns to explain the principles (as if they were explaining to a new student), providing definitions of key words as they go along (using the Glossary box if necessary).

- 2 Play the whole talk again for students to complete the task. Ask students to check in pairs then check as a class.

AUDIO SCRIPT

Track 2.2

ANSWERS

- 1 Both 2 AR 3 VR 4 Both 5 VR 6 VR 7 VR

E Critical thinking

This question encourages students to think creatively in order to generate ideas. As well as their own experiences of education, they should also try to imagine very different situations (e.g., education in other parts of the world; teaching people with special needs; learning without a teacher, etc.) Students discuss the question with a partner. After a few minutes, ask volunteers to share their ideas with the whole class.

CRITICAL THINKING

Developing and applying evaluation standards

Warm-up

Tell students to close their books. On the board, write the phrase "developing and applying evaluation standards". Use the following questions to explore what it means. Finally, tell students to read the information in the box to compare it with their ideas.

- 1 What does *evaluation* mean?
- 2 What do you think *evaluation standards* are?
- 3 What is the connection between *evaluation standards* and *critical thinking*?
- 4 What is the difference between *developing standards* and *applying standards*?

Possible answers: **1** Deciding how good / bad something is, often by giving it a value (= a number). **2** Standard ways of evaluating different things, so we can compare the different values and make good decisions. **3** An important part of critical thinking is moving away from feelings and opinions, and moving toward measuring things in order to evaluate them. For example, we might need to evaluate how reliable a particular website is, so we might develop some standards to enable us to do that. **4** Developing standards involves working out what to measure; applying standards means actually measuring things in order to learn something.

- 1 Students look back at Dieter Rams' principles on page 26 and discuss the questions with a partner.
- 2 Go through the list of possible principles with the class. In pairs students decide which of Rams' principles are most / least important for the given products.
- 3 Students work in a group to identify five of Ram's principles to evaluate a house or apartment. They then evaluate where they live. When they are ready, ask volunteers to share their ideas with the class.

Extension activity

Students work in groups to develop evaluation standards for checking the reliability of websites as sources of factual information. When they are ready, ask volunteers to share their ideas with the class.

Possible answers: *Is it the official website of a well-known and respected organization?; Is it possible that the writer is trying to influence readers (e.g., to buy something, to support something)?; Has the writer been paid to promote a particular viewpoint?; Do you have any evidence that the writer actually knows what he / she is writing about?; Do the "facts" on this website generally agree with facts on other websites?*

VOCABULARY

Vocabulary development

Words to talk about design

- 1 Students work alone to match the words and definitions. Ask students to check in pairs then check as a class.

ANSWERS

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

- 2 Students work alone or in pairs to complete the sentences. Ask students to check in pairs then check as a class.

ANSWERS

1 measurements 2 Industrial 3 flexible
4 environmentally friendly 5 classic 6 elements
7 images 8 process

Extension activity

Use these questions with the class to generate some additional discussion using the target vocabulary:

- 1 What are some examples of classic designs that still look good after many years?
- 2 Which looks better: a product with many small elements, or one with only one or two?
- 3 How can designers make their products more environmentally friendly?
- 4 How can designers make their products more flexible?
- 5 How important are images in the design of magazine covers / book covers, etc.? Why?
- 6 What do you think industrial design means? **Possible answer:** *designing things to be made in factories*
- 7 What are some important measurements in the design of smartphones? **Possible answers:** *the screen size (measured in inches from corner to corner); the width; the weight, etc.*
- 8 What do you think are the steps in the process of designing a piece of furniture?

VOCABULARY

Academic words

- 1 Students work alone to match the words and definitions. Ask students to check in pairs then check as a class. Check pronunciation of *alter* /'ɔltər/ and *interact* /,ɪntər'ækt/.

ANSWERS

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

- 2 Students work alone to complete the sentences. Ask students to check in pairs then check as a class.

ANSWERS

1 alter 2 contrast 3 Eventually 4 income
5 interact 6 substitute

- 3 Students discuss the statements in pairs. When they are ready, open up the discussion to include the whole class.

SPEAKING

Speaking model

Warm-up

Tell students to read the information in the box to find four things they are going to do. Elicit the connection between wishes and designing new products. **Possible answer:** *The first step in the design process is to identify a need. We often talk about needs with the phrase "I wish ..."*

A Analyze

Tell students to read the conversation to answer the questions. They discuss their answers in pairs and feed back to the class.

ANSWERS

- 1 Badly-designed umbrellas.
- 2 They constantly break, are dangerous, and are difficult to close properly.
- 3 Making the frame out of plastic instead of aluminum and adding a simple closing mechanism.
- 4 "Any ideas?"; "What about making it easier to close?"
- 5 "Umbrellas are terribly designed"; "it's really annoying"

Extension activity

Students work in pairs to find three phrases in the conversation for responding positively. Check with the class. **Answers:** *Oh, I agree!; You're right; That would be really useful.*

B Discuss

Students work in pairs to discuss the questions. Encourage them to use some of the techniques and phrases from the model conversation (as identified in *Analyze*, questions 4–5). When they are ready, ask volunteers to share their stories briefly with the class.

GRAMMAR

Wish when referring to present or future time

Warm-up

Tell students to close their books. Use these questions to check what students already know about wishes. Then tell them to read the information in the box to compare it with their ideas.

- 1 When do we make wishes?
- 2 What are some things we might wish for?
- 3 If I say, "I wish you were here", am I talking about the past or the present?
- 4 Which is better, "I wish I was taller" or "I wish I were taller"?
- 5 If I say "I wish you would visit more often", am I talking about the present or the future?
- 6 What's the difference between "I wish you would visit more often" and "I hope you visit more often"?
- 7 What's wrong with this sentence: "I wish I would pass my exams next week"?

Possible answers: **1** When we want to imagine an unreal present or future situation where things are better. There is a second meaning of *wish*, used in greetings like "We wish you good luck" or "I wish you a happy birthday". This grammar lesson is about the first meaning of wishes. **2** Better health, more money, more time, better weather, etc. **3** The present. We use a past tense, because we're talking about an unreal present situation. It's not about past time. **4** Both versions are commonly used by native speakers, but in standard English and academic English, we use *were* for all persons. This is different from when we use the past simple to talk about past time. **5** The future. We usually use *would* to make wishes about the future. **6** We use *hope* + present to talk about the likely or possible future; we use *wish* + *would* to talk about the unlikely or impossible future. **7** We usually have some control over our own future actions, so it sounds very strange to use *would* to make wishes about ourselves. Use *wish* + *could* ("I wish I could pass my exams") or *hope* + present ("I hope I pass my exams") instead.

- 1 Students work alone to complete the sentences, then check in pairs. When you go through the answers carefully with the class, elicit which sentences are about the present (**Answer:** 1, 2, 4) and which are about the future (**Answer:** 3, 5, 6).

ANSWERS

- 1 were
- 2 had
- 3 could fly
- 4 were
- 5 would move
- 6 would come

- Students work in pairs to discuss the questions. Monitor the activity and help with vocabulary where needed. When they are ready, elicit a range of answers from the class, paying attention to any problems or misunderstandings.

SPEAKING

Speaking skill

Talking about problems and solutions

Warm-up

Tell students to look back at the *Speaking model* on page 38. In pairs, they underline all the useful phrases for speaking about problems and solutions. Elicit a list from the class. Then tell them to read the information in the box to compare their list with the list of useful phrases in the box.

Possible answers:

Talking about problems: *Let's start by identifying a problem that needs to be solved.; And then we'll try to come up with a product or process for solving it.; It's really annoying.; And another problem is that it's a real pain to ...; You have to ..., and it's hard to ...*

Talking about solutions: *That problem has been solved.; I wish someone would ...; So we need to ...; I think we could solve the (first) problem if (+ subject + past simple); What about ...?; What if (+ subject + past simple)?; All we'd need is ...*

- Students work in pairs to describe the problems and suggest solutions. Monitor the activity and help with vocabulary where needed. When they are ready, elicit a range of answers from the class.
- Students work in groups to discuss the objects. Encourage them to explore a range of creative solutions to each problem. When they are ready, ask volunteers to present their solutions to the class.

PRONUNCIATION

Pronunciation for speaking

Using intonation to make declarative statements

Warm-up

Tell students to close their books. On the board, write the sentences, "It's a poorly designed door" and "She didn't understand the assignment". Ask volunteers to read the two sentences aloud. Elicit what happens to the speaker's voice at the end of each sentence, and why there is a difference between the two intonation patterns. You could use hand gestures to signal the high (position 3), neutral (position 2), and low (position 1) tones. Then tell them to read the information in the box to compare it with their ideas.

- Go through the instructions with the class. You could ask students to underline the last stressed syllable before listening. Play the recording for students to draw the intonation contours. When you check with the class, ask volunteers to say the sentences with the correct intonation. You could encourage them to use hand gestures to show the tones while speaking.

AUDIO SCRIPT

Track 2.4

ANSWERS

- The instructions weren't clear.
- Don Norman is an American designer.
- The kitchen has a lot of fancy tools.
- Virtual reality is used to train surgeons.
- Arachnophobia is a fear of spiders.
- Someday soon there may be augmented cooking lessons.

- 2 Students work in pairs to mark the stress and draw contour lines. Check with the class before getting students to practice in pairs.

ANSWERS

1 I have a real problem with umbrellas.

2 Plastic is flexible.

3 The product is environmentally friendly.

4 I have an idea.

SPEAKING

Speaking task

Brainstorm

Students brainstorm in groups. They don't need to find exactly one problem or need for each area – the prompts are just there to generate ideas. Monitor carefully to help any students who are struggling to come up with ideas.

Plan

Allow plenty of time for the planning stage. Encourage them to choose one problem as quickly as possible in order to spend more time on the problem-solving tasks. Encourage them to use the creative problem-solving techniques and language from this unit. Monitor carefully to ensure all groups are making good progress.

Speak

Students work in their groups to plan and practice presenting their new product. They should also plan which group members will deliver each part of the presentation.

Extension activity

If you have access to computers and a projector, students could use a program like PowerPoint to plan their presentations. If you have large sheets of paper and colored pens, they could make poster presentations instead.

Share

The groups take turns to present their new products. Make sure they know to pay attention to each other's presentations. You could encourage them to ask questions about other groups' presentations. At the end, hold a class vote to choose the most creative new product.

Reflect

Students discuss the questions in small groups.

REVIEW

Wordlist

Students work in pairs or small groups to work through the *Wordlist*, checking that they all remember what each word or phrase means, how to pronounce it, and how it was used in the unit. Go through the list carefully with the class.

Academic words review

Students work through the sentences, then check in pairs and feed back to the class.

ANSWERS

- 1 substitute 2 altered 3 eventually 4 structure
5 income

Unit review

Students work through the list alone to decide what they can and can't do. They discuss their answers in pairs, including what they remember from the unit about each point. Finally, open up the discussion to include the whole class. Pay particular attention to any boxes that the students didn't check. Explore with them ways of overcoming any remaining problems.