

HONG KONG EDITION

NATIONAL
GEOGRAPHIC
LEARNING

CENGAGE

Life

PRE-INTERMEDIATE

B1

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Welcome to Life,

an exciting series that makes learning English an exploration of the world. Drawing on National Geographic content, *Life* transforms the learning experience into a fabulous journey with irresistible images, articles and videos that engage learners like no series before. Bring *Life* into your classroom!

- A practical, competency-based syllabus helps learners in their development of grammar, vocabulary, functions, pronunciation and skills through appropriate communicative tasks.
- **Real life** lessons model and practise everyday functions, preparing learners to use language in the real world.
- National Geographic video on the DVD allows teachers to bring lessons to life.
- The carefully designed **Critical thinking** syllabus challenges learners to understand texts at a deeper level.
- Vocabulary is introduced thematically, with additional emphasis on key words and word building in **Word focus** and **Wordbuilding** sections.

Student's Book with DVD

- Engaging tasks with fascinating National Geographic content
- Fully integrated National Geographic video for each unit
- Review at the end of each unit
- Grammar reference with practice activities

Workbook with Audio CD

- Further practice and linear progression of Student's Book contents
- Focus on learning skills
- Sample IELTS test allows learners to benchmark their learning

Teacher's Book with Class Audio CD

- Detailed teaching notes with lead-ins, additional activities and answer key
- Notes on vocabulary, grammar, pronunciation and useful background information
- Photocopiable communicative activities and tests

Interactive Whiteboard CD-ROM

- Includes IWB tools, 'zoomable' pages and easy-to-access audio and video
- Create your own interactive tasks with the easy-to-use content creation tool
- Show or hide the key
- Show justification for the answers to the reading and listening comprehension activities

Cover photograph by George Steinmetz
National Geographic Image Collection
Luoping, Yunnan Province, China

Contents

Unit	Grammar	Vocabulary	Real life (functions)	Pronunciation
1 Health pages 9–20	present simple adverbs and expressions of frequency present simple and present continuous	leisure activities <i>do, go or play</i> wordbuilding: verb + noun collocations word focus: <i>feel</i> medical problems	talking about illness	/s/, /z/ or /ɪz/ sound and spelling
VIDEO: Slow food page 18 ► REVIEW page 20				
2 Competitions pages 21–32	verb + <i>-ing</i> forms <i>like -ing / 'd like to</i> modal verbs for rules	wordbuilding: word forms sport venues and equipment competition words word focus: <i>like</i>	talking about interests	/ŋ/ silent letters
VIDEO: Cheese rolling page 30 ► REVIEW page 32				
3 Transport pages 33–44	comparatives and superlatives <i>as ... as</i>	modes of transport transport (1): nouns wordbuilding: compound nouns transport (2): verbs transport words	going on a journey	<i>than</i> sentence stress intonation
VIDEO: Indian railways page 42 ► REVIEW page 44 T				
4 Adventure pages 45–56	past simple past continuous	personal qualities wordbuilding: negative prefixes geographical features <i>in, on or at</i> for time expressions	telling a story	/d/, /t/ or /ɪd/ <i>was</i> intonation for responding
VIDEO: Alaskan ice climbing page 54 ► REVIEW page 56 S				
5 The environment pages 57–68	countable and uncountable nouns quantifiers definite article (<i>the</i>) or no article	materials household items wordbuilding: hyphenated words results and figures word focus: <i>take</i>	phoning about an order	/ðə/ or /ði:/ sounding friendly
VIDEO: Coastal clean-up page 66 ► REVIEW page 68				
6 Stages in life pages 69–80	verb patterns with <i>to</i> + infinitive future forms: <i>going</i> <i>to, will</i> and present continuous	life events stages in life celebrations word focus: <i>get</i> wordbuilding: synonyms	inviting, accepting and declining	/tə/ contracted forms emphasising words
VIDEO: Steel drums page 78 ► REVIEW page 80 A				

Listening	Reading	Critical thinking	Speaking	Writing
<p>someone talking about two elderly ballroom dancers</p> <p>a health expert analyses sleep</p> <p>a radio interview about long life</p>	<p>a quiz about how well you sleep</p> <p>an article about centenarians S</p> <p>an article about measuring health and happiness S</p>	the main argument	<p>a quiz your current life</p> <p>measuring happiness</p>	<p>text type: online advice</p> <p>writing skill: conjunctions (<i>and, or, so, because, but</i>)</p>
<p>someone describing an Ironman competition</p> <p>three people talking about sport</p> <p>a reporter describing the rules of a competition</p>	<p>quotes by famous sports people</p> <p>an article about crazy competitions</p> <p>an article about female wrestlers in Bolivia</p>	reading between the lines	<p>guess the ambition</p> <p>explaining the rules of a competition</p> <p>your opinions about sport</p>	<p>text type: an advert or notice</p> <p>writing skill: checking your writing</p>
<p>someone describing a photo of a girl travelling by train in India</p> <p>two people discussing the pros and cons of electric cars</p> <p>two documentaries about using animals for transporting</p>	<p>an article about transport in the future</p> <p>an article about dog sledging</p> <p>an article about the fate of the rickshaw in Kolkata</p>	reading between the lines	<p>transport you use</p> <p>attitudes to using animals for transporting</p> <p>arguing for and against keeping rickshaws in Kolkata</p>	<p>a report about how people travel around town</p> <p>text type: notes and messages</p> <p>writing skill: writing in note form</p>
<p>a cover describing Rumbling Falls Cave</p> <p>an interview with a survival expert</p>	<p>an article about adventurers</p> <p>an article about a climbing accident</p>	identifying opinion	<p>asking about your past</p> <p>qualities needed for an expedition</p> <p>events you remember</p> <p>retelling a story</p>	<p>text type: a true story</p> <p>writing skill: using <i>-ly</i> adverbs in stories</p>
<p>extract from a documentary about the artist George Sabra</p> <p>a radio phone-in show about recycling</p>	<p>an article about e-rubbish</p> <p>an article about the Greendex M</p> <p>an article about a boat made of plastic bottles, the <i>Plastiki</i> ST</p> <p>an online order</p>	close reading	<p>opinions on recycling</p> <p>presenting a report</p> <p>an interview with an environmentalist</p>	<p>a report of a survey</p> <p>text type: emails</p> <p>writing skill: formal language</p>
<p>an explanation to a riddle</p> <p>three people talking about their plans and intentions</p> <p>a news item about Mardis Gras</p>	<p>an article about how a couple changed their life</p> <p>an article about how Mardis Gras is celebrated around the world</p> <p>an article about a Masai rite of passage</p>	identifying the key information	<p>life-changing decisions</p> <p>your favourite festival</p> <p>describing annual events</p>	<p>text type: a description</p> <p>writing skill: descriptive adjectives</p>

Unit	Grammar	Vocabulary	Real life (functions)	Pronunciation
7 Work pages 81–92	prepositions of place and movement present perfect simple	jobs wordbuilding: suffixes office equipment <i>for</i> or <i>since</i> job satisfaction word focus: <i>make</i> or <i>do</i> job adverts	a job interview	intrusive /w/ irregular past participles
VIDEO: Butler school page 90 ► REVIEW page 92				
8 Technology pages 93–104	defining relative clauses zero and first conditional	the internet wordbuilding: verb prefixes expedition equipment word focus: <i>have</i> technology verbs	asking how something works T	intonation in conditional sentences linking
VIDEO: Wind power page 102 ► REVIEW page 104 S T E				
9 Language and learning pages 105–116	present simple passive <i>by</i> + agent past simple passive	education phrasal verbs wordbuilding: phrasal verbs	describing a process	stress in two-syllable words stress in phrasal verbs
VIDEO: Disappearing voices page 114 ► REVIEW page 116				
10 Travel and holidays pages 117–128	past perfect simple subject and object questions <i>-ing</i> / <i>-ed</i> adjectives	holiday words (types of holiday, accommodation, activities, travel items) holiday adjectives wordbuilding: dependent prepositions places in a city	direct and indirect questions	'd number of syllables /dʒə/
VIDEO: Living in Venice page 126 ► REVIEW page 128				
11 History pages 129–140	<i>used to</i> reported speech	archaeology wordbuilding: word roots <i>say</i> or <i>tell</i> word focus: <i>set</i>	giving a short presentation	/s/ or /z/ pausing
VIDEO: The lost city of Machu Picchu page 138 ► REVIEW page 140				
12 Nature pages 141–152	<i>any-, every-, no-, some-</i> and <i>-thing, -where, -one, -body</i> second conditional <i>will</i> / <i>might</i>	classification of animals extreme weather society and economics wordbuilding: adjective + noun collocations	finding a solution	<i>would</i> / 'd word stress
VIDEO: Cambodia Animal Rescue page 150 ► REVIEW page 152 S				

COMMUNICATION ACTIVITIES page 153 ► GRAMMAR SUMMARY page 156 ► AUDIOSCRIPTS page 169

STEAM-related section **S**: Science **T**: Technology **E**: Engineering **A**: Art **M**: Math

Listening	Reading	Critical thinking	Speaking	Writing
someone talking about triplet police officers a documentary about working as a photographer T an interview with an engineer	workplace messages with instructions an article about the cost of new jobs to an area an article about modern-day cowboys	the author's opinion	giving directions describing past experiences your opinion of a job	text type: a CV writing skill: action verbs for CVs
a documentary about the importance of technology T a science programme about a new invention T	an explorer's blog T an article about biomimetics S T	supporting the main argument	problems that inventions solved inventing a new robot planning an expedition using nature to improve designs	text type: a paragraph writing skills: connecting words; topic and supporting sentences
an English teacher talking about working in Japan a radio documentary about learning Kung Fu in China	an article about the history of writing T an article about saving languages	fact or opinion	adult education a general knowledge quiz the author's opinion	a general knowledge quiz text type: forms writing skill: providing the correct information
an interview with a herpetologist two conversations about problems whilst on holiday an interview with a <i>National Geographic</i> tour guide	an article about tipping in other countries an article about the tunnels in Paris	reading between the lines	a holiday or journey you remember planning the holiday of a lifetime a tourist website	a tourist webpage text type: a formal letter writing skill: formal expressions
an historian talking about Scott's hut at the Antarctic an interview with an archaeologist	an article about moments in space history T a biography of Jane Goodall S	relevance	items for a time capsule how we used to live moments in history reporting an interview an interview for a biography	text type: a biography writing skill: punctuation in direct speech
a nature expert talking about how animals camouflage themselves S a documentary about a photographer	an article about storm chasers S a profile on Greenland S	close reading	promoting your region planning for every possibility predicting your country's future	text type: a press release writing skill: using bullet points

Unit 8 Technology



Robots and humans working together
Photo by Robert Markowitz and Bill Stafford, NASA

FEATURES

94 Invention for the eyes

An inventor finds a solution to make the whole world see

96 Technology for explorers

How technology is changing the world of exploration

98 Designs from nature

What we can learn from the design of animals

102 Wind power

A video about how one American school is using this energy source

1 Look at the photo and the caption. How do you think they are going to 'work together'? In what ways do robots already work with humans?

2  **2.7** Listen to someone talking about the importance of technology in our lives. Answer the questions.

- 1 What everyday jobs does technology do for humans?
- 2 Under what circumstances does technology ever make mistakes?
- 3 Where does the robot in the photo work? What does it do?

3 Which of these comments are true for a robot, a human or both?

has new ideas finds solutions and solves problems
never gets hungry or tired can make a mistake
doesn't get bored always follows instructions
makes decisions invents things

4 Work in groups. Compare humans and technology. Think of two more advantages or disadvantages for each.

8a Invention for the eyes

Speaking

- 1 Work in pairs. What problems did these famous inventions solve? Check your answers on page 153.

Braille electric light bulb
microwave oven post-it note telescope

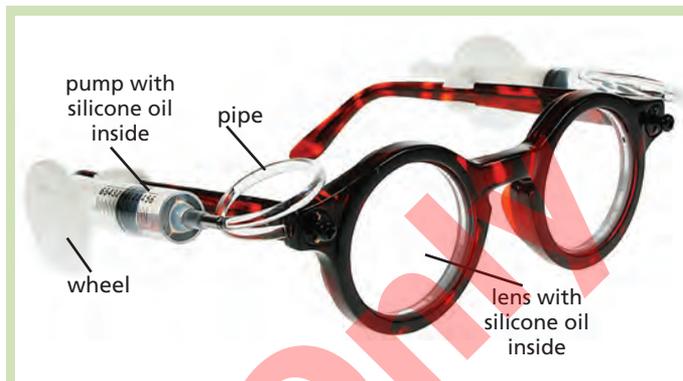
- 2 Think of one more invention that solved a problem and tell the class. Compare everyone's inventions and decide which was the most important in human history.

Listening

- 3 2.8 This Tibetan man is wearing a new type of glasses. Listen to a science programme about the glasses. Answer the questions.

- 1 What is a problem for many people in the world?
- 2 How can the glasses solve this problem?
- 3 In which parts of the world do people now wear the glasses?

- 4 2.9 Listen to the first half of the programme again. Number the instructions on the diagram in the correct order (1–4).



- The lens changes shape.
1 The wearer turns the wheels on each side.
..... The silicone oil moves into the lens.
..... The pump pushes the silicone oil through the pipe.

- 5 2.10 Listen to the second half of the programme again. Are the sentences true (T) or false (F)?

- 1 Joshua had to do experiments with the glasses before they worked properly.
 - 2 The first man who used the glasses made clothes.
 - 3 The glasses are expensive to produce.
 - 4 Thirty thousand people will have the glasses by 2020.
- 6 How does Joshua's invention compare with your list of other inventions in Exercise 2? Does it solve a bigger problem?

Grammar defining relative clauses

- 7 Look at the sentences (a–c) from the science programme. Answer the questions.

- a These people live in parts of the world **where there aren't many opticians.**
 - b There is a scientist who has found a solution to the problem.
 - c Joshua Silver has invented glasses which don't need an optician.
- 1 Which word (*where*, *who* or *which*) do we use to talk about a) a person, b) a place and c) a thing?
 - 2 In sentence a, the highlighted part is called the defining relative clause. It gives essential information to help people identify which person, place or thing we are talking about. Underline the defining relative clause in sentences b and c.



▶ DEFINING RELATIVE CLAUSES

The first person *who used the new glasses* was a man in Ghana.

Silver started an organisation *which is called the 'Centre for Vision in the Developing World'*.

The organisation has worked in many places *where over thirty thousand people now wear the glasses*.

You can use *that* instead of *who* or *which* (but not *where*). It's less formal.

Tim Berners Lee is the man that invented the World Wide Web.

It's the invention that's changed the world.

This is the room that where he invented it.

For further information and practice, see page 163.

8 Look at the grammar box. Then complete the sentences with *who*, *which* or *where*. Underline the defining relative clause.

- Einstein was a scientist changed the way we think.
- The Hubble Telescope in space can see places no one has ever been.
- Concorde was the first commercial aeroplane flew at supersonic speed.
- Silicon Valley is a place many successful technology companies like Apple and Microsoft are based.
- In 1800 Alessandro Volta built a machine was the first battery.
- Hedy Lamarr was a woman was famous as an actress in the 1940s. She was also the co-inventor of a secret communication system.

9 In which sentences in Exercise 8 can you use *that* at the beginning of the relative clause?

10 Complete the text on the right about another invention, *Lifestraw*. Use these phrases and a relative pronoun (*who*, *which* or *where*).

cleans the water ~~need clean water~~
 there is a lake, river can break
 there is no safe
 specialise in solving problems like this

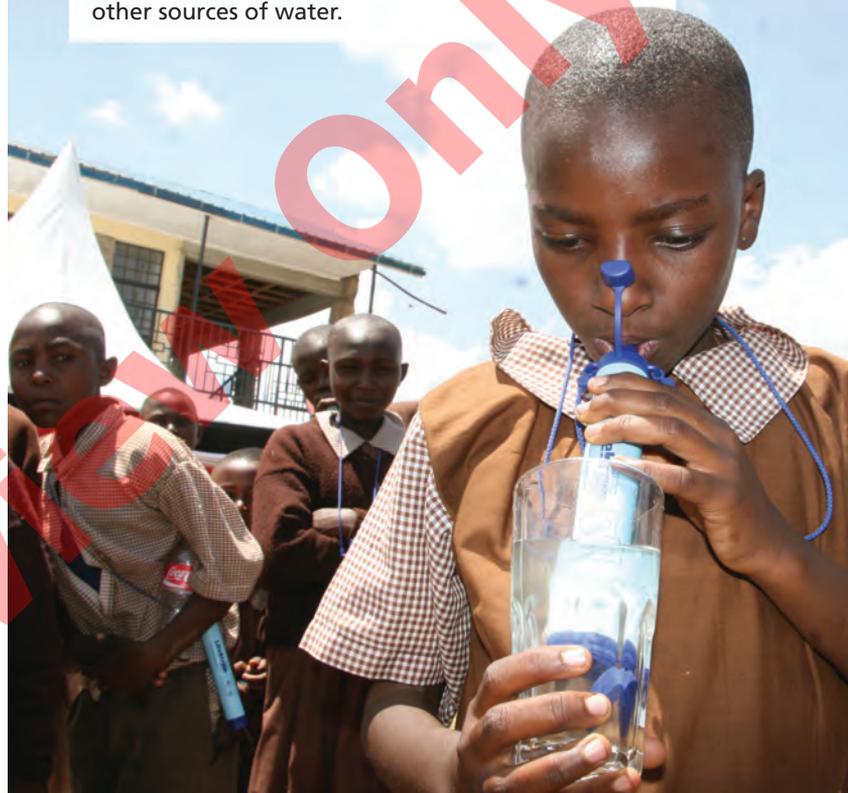
11 Think of a famous person, a famous invention and a famous place or city. Write a sentence to define each one. Then swap sentences with your partner. Can he/she guess what they are?

Example:

*It's a thing which you put in your computer.
 It's small but it has a large memory. (a USB memory stick)*

Lifestraw

There are still over one billion people in the world ¹ *who need clean water*. They live in regions ² water supply. Now, some inventors ³ have developed *Lifestraw*. It's an invention ⁴ while you drink. It doesn't have any moving parts ⁵ so it lasts a long time and it's cheap to produce (\$2 each). It's also small and easy to carry to places ⁶ or other sources of water.



Speaking

12 Work in groups. Invent a new kind of robot which helps people. Discuss these questions and draw a simple design of the robot with any important information on a large sheet of paper.

- What is the robot for (e.g. cleaning the house)?
- Who will use it (e.g. busy working people)?
- Where can you use it (e.g. around the office)?

13 Prepare and give a short presentation for the class about your new invention.

Our new invention is a robot which ...

It's for people who ...

You can use it in places where ...

8b Technology for explorers

People are becoming more tech-savvy these days. Your class is doing a survey on the use of the Internet.

Vocabulary the Internet

1 Complete the comments from different people about how they use the Internet with these verbs.

do download log on search **set up**
subscribe upload write

- I set up an account with a social networking site because it's a good way to keep in touch with old friends.
- Does anyone buy CDs anymore? I don't. It's much easier to _____ music.
- I _____ a weekly blog with all my family's news.
- A lot of my friends _____ online gaming but I find it all a bit boring.
- When I need to find information quickly, the first thing I do is to _____ the web.
- I _____ to a daily podcast which gives me all the latest news.
- My friends and family _____ and share their photos all the time.
- Online banking is so easy. You just _____ with a password and your account details.

2 Which of the sentences in Exercise 1 are true for you? Change any sentences which are untrue or give more details.

I write a blog but I don't write about my family. I describe what my friends and I like doing.

▶ WORDBUILDING verb prefixes

Many prefixes can change or add new meaning to a verb. For example, the verb *load* can be **download**, **upload**, **unload**, **overload**, **reload**.

For further information and practice, see Workbook page 67.

Reading

Your Information Technology teacher, Mrs Mona, asks you to read a blog about the Internet.

3 Read the blog. Answer the questions.

- How does Jay Gifford use the Internet?
- Why does he think modern technology is important for explorers?

4 Read the blog again. Which of these things does Jay write about on his social networking sites?

- where he is
- what he is doing at the moment
- his plans for later
- his recent news
- his opinions

http://blogs.ngm.com/blog_central/wild/

NATIONAL GEOGRAPHIC

NGM BLOG WILD

Kamchatka Project

Posted by Jay Gifford | July 15, 2:55 PM

After travelling round the world for almost half a week and moving through three international airports and nineteen time zones, we finally step off the helicopter. We are at the beginning of the Karimskaya River in the region of Kamchatka. It's a bright sunny day and in the far distance I can see the Karimski volcano. This is probably the wildest place in Russia but if the weather is this good for the next few days, the expedition will go well.

In the past, when explorers arrived in a strange place, they put up their tents or cooked a meal. But nowadays, when explorers arrive in a new place, they log on to their social networking site using a satellite phone. I write, 'Just landed. Need to relax for a few hours.' Explorers in the past wrote about their adventures in books which were published months or years later. Nowadays, I post a message in seconds.

Sites like Facebook and Twitter also help if we have a problem. Someone in our group touched a strange plant and suddenly his skin was red and painful. I asked for advice on Twitter: 'Hand touched a strange plant. It's red and hot. Any advice?' Minutes later, someone who knew the region replied, 'Probably a Pushki plant. If it is, it'll hurt but it won't kill you!' In the age of the modern explorer, communication like this really helps to make decisions and sometimes it even saves lives.

[Continue reading this entry »](#)
Posted by Jay Gifford | [Comments \(21\)](#)
Filed Under: [Kamchatka](#), [Karimskaya](#), [Wild](#), [River](#)

Grammar zero and first conditional

You noticed that Jay Gifford used the zero and first conditional in his blog. You want to learn more about these.

- 5 Look at the sentences (a–c) from the blog in Exercise 3. Answer the questions (1–2).
- If the weather is this good for the next few days, the expedition will go well.
 - Sites like Facebook and Twitter also help if we have a problem.
 - When explorers arrive in a new place, they log on to their social networking site.
- Which sentence talks about things that are generally true?
 - Which sentence talks about a possible future situation?

► ZERO and FIRST CONDITIONAL

zero conditional

if/when + present simple, present simple
When we have news, we text all our friends.
We text all our friends if we have news.

first conditional

if + present simple, will (won't)
If I hear any news, I'll text you.
I'll text you if I hear any news.

For further information and practice, see page 163.

- 6  2.11 Look at the grammar box. Complete the conversation between two explorers planning a canoeing expedition with the correct form of the verbs. Then listen and check your answers.

- A: So, what are we going to take with us?
B: Well, I don't know what the weather's going to be like. If it rains, we ¹ (need) all this waterproof clothing.
A: Yes, but if we take all that, there ² (not / be) space for anything else. Anyway, when I go canoeing, I ³ (always / get) wet. Why are you packing that?
B: If we don't have a map, we ⁴ (probably / get) lost.
A: Don't worry. If I ⁵ (bring) my GPS, we'll know exactly where we are at all times. What about food?
B: I normally take tins and packets of food when I ⁶ (go) on a trip like this.
A: Good idea. If you carry the food in your canoe, I ⁷ (pack) both the tents in mine.
B: Maybe that's not such a good idea. If something ⁸ (happen) to one of us, then the other person either won't have any food or won't have a tent.
A: Well, hopefully that ⁹ (not / happen) if we're careful.

7 Pronunciation intonation in conditional sentences

You and your classmates want to practise using intonation in conditional sentences.

- a  2.12 In conditional sentences, when the *if/when* clause is first, the intonation rises and then falls. Listen and repeat.

If it rains, we'll need this.

- b Work in pairs. Practise reading the conversation in Exercise 6. Pay attention to the rising and falling intonation where necessary.

Vocabulary and speaking

- 8 Work in groups. You are going to the mountains for two days. The weather forecast is for sun on the first day and rain on the second. Because you are walking and camping, you don't want to take too many items. You have tents, rucksacks and food. Discuss these other items and choose five others to take. Explain your reasons for taking them.

camera gas cooker GPS hairdryer hat laptop
matches mobile phone sun cream sunglasses torch
towel umbrella video game player

If we take ..., we won't need ...

We'll need ... if it rains ...



8c Designs from nature

To help you prepare for the 'Be-an-inventor competition', Mrs Mona gave you an article to read.

Reading

- 1 Look at the photos at the top of page 99. How is the robot similar to the gecko?
- 2 Read the first two paragraphs of the article. Answer these questions.
 - 1 Why are geckos amazing?
 - 2 What are the scientists interested in?
 - 3 What is the problem with the robot?
 - 4 Why do people study plants and animals?
- 3 Look at the photos (1–4). Inventors and designers studied these plants and animals for the inventions (A–D) at the bottom of the article on page 99. Try to match the animal or plant to the invention. Then check your answers by reading the rest of the article.

Critical thinking supporting the main argument

- 4 The main argument of this article is that the design of animals can improve the design of our own world. Which of these sentences support or restate the argument?
 - 1 Scientists want to use the design of a gecko on their own robot.
 - 2 Animals and plants can teach humans a lot about design and engineering.
 - 3 Most humans have never seen a whale.
 - 4 Mercedes Benz is producing a new kind of car.
 - 5 Engineers in Canada are studying whales' flippers because they move so effectively through water.

Word focus have

Explore the uses of *have*, so that you can use it properly in your proposal for the competition.

- 5 Look at two uses of *have* (a–b) when it is the main verb (i.e. not an auxiliary verb). Match *have* in the sentences from the article (1–5) with the two uses.

have /hæv/

a possessing or owning something (including physical appearance, ideas, illnesses, etc.)

b actions or experiences

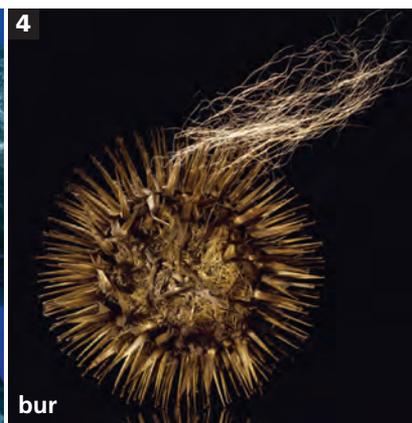
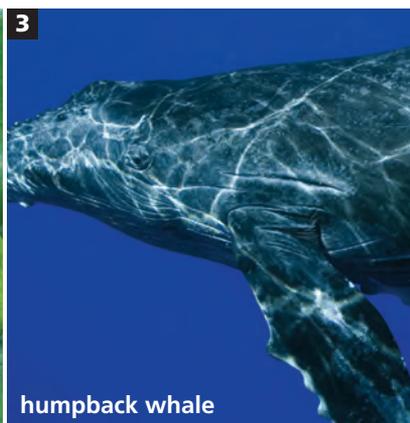
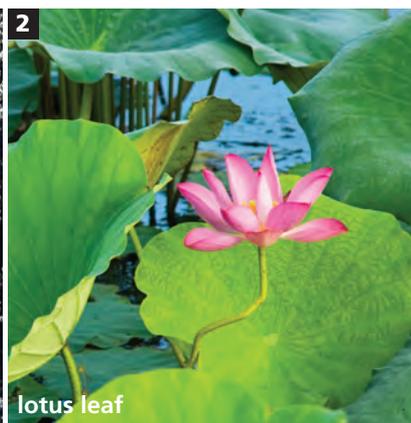
- 1 It has four feet. *a*
- 2 It still has a more difficult time when it tries to walk upside down.
- 3 When they have a problem, nature often has the answer.
- 4 Most people have some Velcro on an item of clothing.
- 5 He had a closer look.
- 6 We can also use *have got* instead of *have* when talking about possessing or owning something (e.g. *It's got four feet*). Look at these nouns. We can use *have* with all of them, but which ones can't use *have got*?

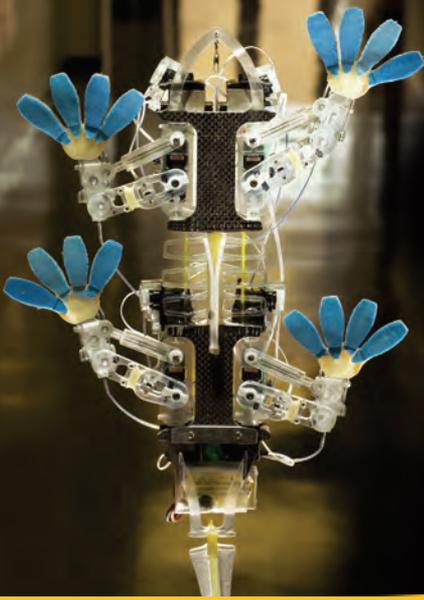
a bad cold a chat a new car a rest blonde hair
fun a good time

Speaking

- 7 Work in groups. Read the three pieces of information about different animals. Discuss how these animals could help humans. Which products in our life could they improve?

- Spiders have got silk which is very light and very strong. It's stronger than many human-made materials, including steel.
- The Abalone is a type of shellfish. It's got a shell that is much stronger than many types of stone.
- Glow worms have a cold light which is more efficient than a light bulb.





DESIGNS FROM Nature

*When we have a problem,
nature often has the answer*



In a room at Stanford University, scientists are studying a small animal called a gecko. It's an amazing animal because it can move very quickly up and down a tree and it can even walk upside down on ceilings. The scientists are particularly interested in the gecko's feet. They want to use the same design on their own robot. The metal robot looks very similar to the gecko. It has four feet which can also walk up walls made of glass or plastic. However, it still has a more difficult time when it tries to walk upside down.

Animals and plants can teach humans a lot about design and engineering. As a result, many engineers, scientists and designers spend time studying them. When they have a problem, nature often has the answer. This science is called biomimetics. *Bio-* means 'studying living things' and *mimetics* means 'copying the movement of things'. In other words, scientists – or biomimeticists – study animals and plants in order to copy the design.

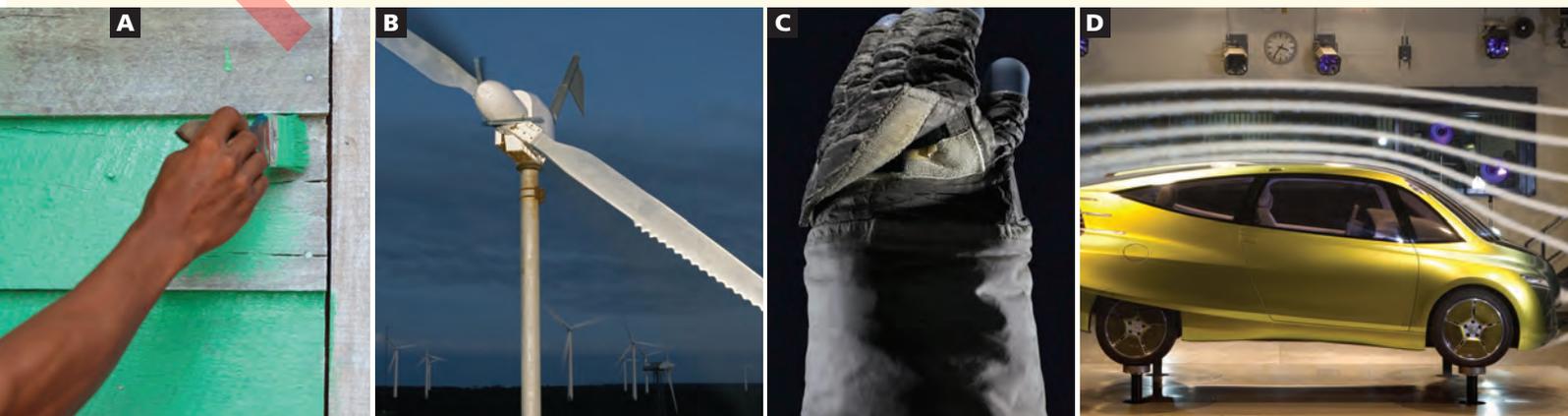
Take, for example, a whale. Engineers in Canada are studying their flippers because they move so effectively through water. The engineers believe the shape can also improve the movement of wind turbines. Similarly, the boxfish is another animal from the sea which is helping car manufacturers in Germany. Mercedes Benz is using the shape of the fish for one of its new cars. The shape makes it faster and more fuel efficient.

Velcro is probably the most famous example of biomimetics. Most people have some Velcro on an item of clothing. It was invented by the Swiss engineer George de Mestral in 1948. He was walking in the countryside when he pulled a plant's bur from his trousers. He noticed how the bur stuck so well to his clothes. He worked on his idea and the result was Velcro, which became an affordable alternative to the traditional zip.

In 1982, Wilhelm Bartlott was another inventor who had a great idea when he was studying the leaves of a lotus plant. Bartlett noticed that water always ran off the leaf. When he had a closer look, he also noticed how the leaf cleaned itself. Bartlott copied the leaf's special surface and now you can find it in specialised paint products where water and dirt never stay on the paint.

In conclusion, biomimetics has helped to design our world and there are many more future possibilities. Unfortunately, it might take a long time to discover all the possibilities. This isn't really surprising because it's taken nature thousands of years to design its animals and plants.

flipper (n) /'flɪpə(r)/ the flat arm or leg of a sea animal, used for swimming
bur (n) /bɜː/ a seed from a plant
zip (n) /zɪp/ two rows of metal teeth-like parts which come together (e.g. on a coat)



8d Gadgets

Head Torch

- You can ¹ *push* the light forward and backwards.
- ² and choose three types of lighting (normal / long distance / emergency red).
- ³ the button on the side to
- ⁴ an emergency 'whistle' signal.
- ⁵ it into a laptop and
- ⁶ its batteries for up to 160 hours.

Features



Vocabulary technology verbs

To enter the competition, you are also required to write an advert for your invention. Mrs Mona advises you to use some technology verbs.

- 1 Look at the photo of the head torch in the advert above. What is it used for? Would it be useful for you? Would you buy one?
- 2 Complete the list of features (1–6) for the head torch with these verbs.

plug press **push** recharge send switch on

3 Pronunciation linking

To improve your presentation skills, you and your classmates want to learn more about linking in pronunciation.

- a **2.13** A word ending with a consonant sound links to the next word if it starts with a vowel sound. Listen and practise saying these instructions.
 - 1 Switch_it_on.
 - 2 Plug_it_into a laptop.
 - 3 Recharge_it_overnight.
 - 4 Send_an_email.
 - 5 Click_on the link.
- b Work with a partner. Think of more items you often use at home or at work and make sentences using the verbs in Exercises 2 and 3a. Pay attention to linking where necessary.

I switch_on my mobile_in the morning and recharge_it_overnight.

Real life asking how something works

Mrs Mona gave you a conversation about a new invention to listen to.

- 4 **2.14** Listen to two people who are going on a camping trip. They talk about the head torch. Tick the features in Exercise 2 that they discuss.
- 5 **2.14** Listen to the conversation again. Tick the questions in the box you hear.

▶ ASKING HOW SOMETHING WORKS

Where do I switch it on?
 How did you do that?
 What happens if I press this button?
 What is this for?
 How long does the battery last?
 Why do you need to do that?
 How do you make it switch on / record?

- 6 Work with a partner. Take turns to ask and explain how the objects or gadgets in the box below work.

a mobile phone a CD player
 an MP3 player a computer
 an interactive whiteboard a DVD player
 a vending machine

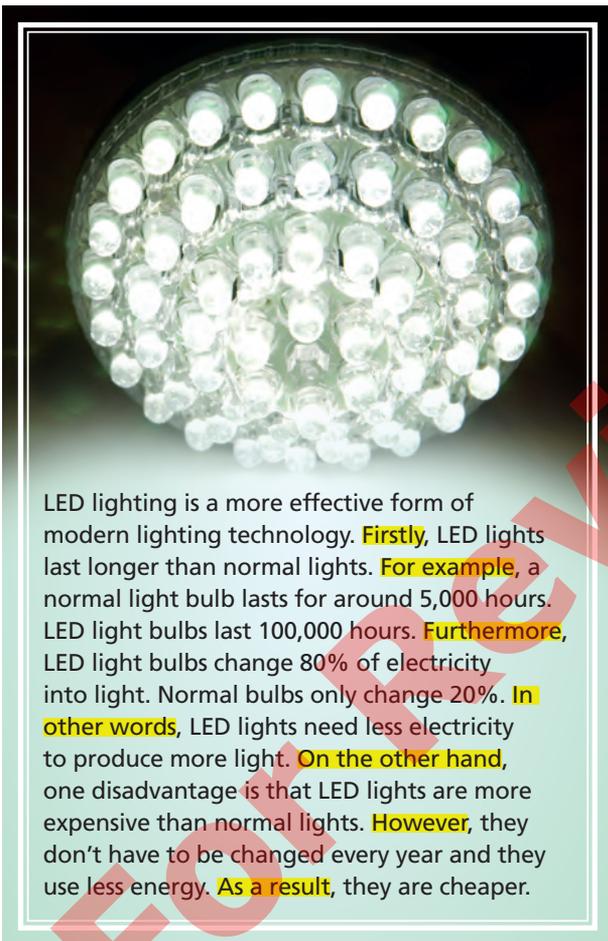
8e An argument for technology

You are going to write some pros and cons of technology. Mrs Mona gave you a paragraph about LED lighting to read.

Writing a paragraph

1 Read the paragraph. Where do you think it comes from? Choose the correct option (1–3).

- 1 an instruction manual
- 2 a report on energy in the workplace
- 3 a message to a colleague at work about the lighting



2 Writing skill connecting words

Look back at the highlighted connecting words in the paragraph in Exercise 1. Match the words with their uses (1–6).

- 1 to sequence ideas and sentences: *firstly*
- 2 to introduce an example: _____
- 3 to add supporting information: _____
- 4 to say the same thing in a different way: _____
- 5 to introduce contrasting information: _____
- 6 to introduce a result: _____

3 Writing skill supporting sentences

The first sentence in the paragraph about LED lighting is the topic sentence. It gives a general introduction to the main idea of the paragraph. Afterwards, all the other sentences support this main idea. Which of these sentences (1–8) are topic sentences (T) and which are supporting sentences (S)?

- 1 The Internet has completely changed our access to information.
- 2 Take, for example, how many books and articles you can read online.
- 3 For example, closed circuit television (CCTV) is on our streets and in public places.
- 4 There are many different ways to use technology in security.
- 5 In other words, all your personal information can be put onto one identity card.
- 6 Firstly, Russia put the first satellite in space in 1957. Now there are thousands in space.
- 7 Over the last fifty years, there have been many great achievements in space travel and technology.
- 8 Furthermore, robots have now landed and travelled on Mars.

4 Read these notes for a paragraph about GPS technology. Write the paragraph using the notes and connecting words from Exercise 2.

Main argument:

GPS is a good idea for anyone who travels a lot

Supporting ideas:

- 1 GPS maps are always up-to-date and accurate
- 2 more expensive than a normal map but safer to use when driving
- 3 saves time (and money on petrol)

5 Choose one of these types of technology and prepare to write a paragraph about why it is useful. Write your paragraph with three supporting ideas.

mobile phones email wireless technology
music downloads your own idea

6 Use these questions to check your paragraph.

- Have you used a topic sentence?
- Have you used three supporting sentences?
- Have you used connecting words?

8f Wind power



The people of Spirit Lake are using the power of the wind to ensure a better future for everyone.

You signed up for a Technology day camp. You are going to watch a video about wind power with your classmates.

Before you watch

- 1 Work in groups. Look at the photo and discuss the questions.
 - 1 Where are the children in the picture?
 - 2 What technology can you see? What is it for?
 - 3 How will the children benefit from this technology?

While you watch

- 2 Watch the video and check your answers from Exercise 1.
- 3 Watch the video again and answer the questions.
 - 1 How much money could the wind turbines save the school district in energy costs?
.....
 - 2 How would the district spend the money?
.....
 - 3 Why is it very important that the turbines in Spirit Lake can withstand strong winds?
.....
 - 4 What does the school district do with the energy from the larger turbine?
.....
 - 5 Why are farmers happy when the wind blows?
.....
 - 6 What do teachers encourage students to do?
.....
- 4 Watch the video again. Complete the phrases with the correct number.

6,000 71,000 81,530 130 257 180 2

- 1 The number of wind turbines in Spirit Lake:
- 2 The amount of money the smaller turbine has saved the district: \$.....
- 3 The height of a wind turbine: feet
- 4 The strength of winds the wind turbines can withstand: mph
- 5 The amount of money Charles Goodman will make in a year from his wind turbines: \$.....
- 6 The number of wind turbines in this piece of the Iowa countryside:
- 7 The number of homes in the town of Des Moines:

After you watch

5 Roleplay a conversation between a salesperson and a head teacher

Work with a partner.

You: You are a wind turbine salesperson. You are going to visit a school to explain the benefits of wind turbines. Write notes about three or four benefits.

Your partner: You are the head teacher of a school. Read the notes below and prepare questions to ask the salesperson.

- You are interested in wind turbines but are not sure whether to build one for your school. Some parents have complained that wind turbines are very ugly.
- Think of three or four disadvantages of wind turbines.
- Ask the salesperson about the benefits of wind turbines.

Act out the conversation. Then change roles and repeat the conversation.

- 6 Jan Bolluyt says: 'So, you know, it's not just a small thing.' What is he referring to? Do you agree with him?

- 7 Work with your partner. Discuss these questions.

- 1 What types of alternative energy are used in your country?
- 2 What are the advantages and disadvantages of alternative energy compared to fossil fuels?
- 3 Where do you think we will get our energy in the future?

blade (n) /bleɪd/ the long, narrow part that makes a propeller turn when the wind hits it
blow (v) /bləʊ/ the wind does this when it moves
crop (n) /krɒp/ plants that farmers grow and harvest
encourage (v) /ɪn'kʌrɪdʒ/ get someone to do something
ensure (v) /ɪn'ʃʊː/ guarantee
flat (adj) /flæt/ without hills or mountains
fossil fuel (n) /fɒsɪl 'fjuːəl/ gas, oil or coal
foundation (n) /faʊn'deɪʃən/ a solid base under the ground that a structure sits on
grid (n) /grɪd/ a system of cables for distributing electricity
impressive (adj) /ɪm'presɪv/ causing a feeling of admiration
pay off (v) /peɪ 'ɒf/ finish paying for something
power (n) /'paʊə/ electricity, energy
power (v) /'paʊə/ send electricity to
rod (n) /rɒd/ a long, thin piece of metal or wood
save (v) /seɪv/ use less money
silo (n) /'saɪləʊ/ a place where farmers put their crops after they harvest them
steel (n) /stiːl/ a type of metal
turbine (n) /'tɜːbaɪn/ a type of machine that produces energy from a moving propeller
withstand (v) /wɪð'stænd/ resist

UNIT 8 REVIEW

Grammar

1 Make sentences with a relative clause using the words.

- the invention / has changed the modern world / the Internet
The invention which has changed the modern world is the Internet.
- camping / an activity / I enjoy doing
- GPS / a gadget / tells you where you are
- my parents / the people / always happy to see me!
- the thing / I hate about TV / the adverts
- the Space Shuttle / the first spacecraft / travel from and to Earth



2 Complete these sentences for you. Then tell your partner why.

- Someone who changed my life was ...
- Something which improved my life was ...

3 Complete the sentences with these verbs. Use *will* ('ll) or *won't* where necessary.

not call not go love press work

- When you _____ this button, the TV comes on.
- If you put new batteries in, it _____ again.
- When it's sunny, we _____ to go to the beach.
- If he _____, then he doesn't want to come with us.
- I _____ hiking if you don't go.

I CAN

describe people, places and things with extra information

talk about situations that are generally true and possible in the future

Vocabulary

4 Match the verbs (1–5) with the nouns (a–e).

- | | | |
|---------|---|--------------|
| 1 make | → | a a problem |
| 2 find | → | b a decision |
| 3 solve | | c an idea |
| 4 make | | d a solution |
| 5 have | | e mistakes |

5 Complete the questions with words from Exercise 4. Then discuss the questions with your partner.

- What's the best _____ you've ever had in your life?
- What decisions do you _____ in your daily life or at work? How important are they?
- What's the most common mistake you _____ in English?
- Do you like to solve a _____ on your own or _____ a solution with others? Why?

6 Match two words (one from each box) and complete the sentences.

click	log	plug	forward	into
push	set	turn	on (x2)	round
				up

- I want to _____ but I've forgotten my password.
- How do you _____ an online account?
- _____ it _____ the wall socket and it'll recharge.
- For maximum volume, _____ the dial _____ to number 10.
- You can pull it backwards for reverse or _____ it _____ to go faster.
- _____ the icon in the top corner to open the program.

Real life

7 Put these words in the correct order to make questions for asking how something works.

- switch / it / where / do / I / on?
- you / did / that? / do / how
- if / I / happens / button? / press / this / what
- the / battery / long / how / does / last?
- that? / why / do / do / you / to / need
- record? / how / it / do / you / make

8 Match these responses (a–e) with the questions in Exercise 7. One response answers two questions.

- So you don't lose any data.
- Eight hours.
- There.
- By pressing this.
- You turn it off.

I CAN

talk about using technology

explain and ask how something works

Speaking

9 Work in pairs. Explain to your partner how to use the DVD in the back of this book.