

8a Experiments and inventions

1 Vocabulary extra experiments and inventions

Complete the table with the different forms of the words.

Verb	Noun
invent	1 _____
2 _____	communication
experiment	3 _____
4 _____	solution
instruct	5 _____
6 _____	decision

2 Complete the sentences with these verbs.

do find follow get have invent
make solve

- Great inventors _____ new ideas all the time.
- We still haven't been able to _____ this problem. We don't know what the answer is.
- When you buy something with electronics inside, you should always _____ the instructions carefully.
- Scientists have to _____ lots of experiments before they can reach a conclusion.
- Did you _____ the solution to the problem?
- During the day I work in an office, but in my spare time I like to _____ things. At the moment, I'm building a new type of car!
- We need to _____ a final decision and then tell everyone.
- The advantage with robots is that they don't _____ tired.

Grammar defining relative clauses

3 Match the sentence beginnings (1-5) with the endings (a-e).

- That's the scientist
- She only invents things

- I saw him speak in Rio
- It's a device
- That's the inventor who
 - where there was a science conference.
 - who created the Internet.
 - that sends secure messages.
 - has changed the world with her inventions.
 - that help other people.

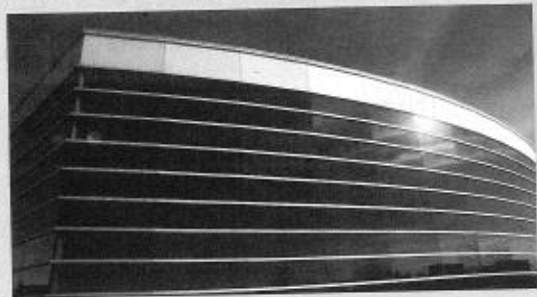
4 Complete the article with *who*, *which*, or *where* and these phrases.

- there is less sunlight
- the sun shines brightly
- change with the sun
- come from universities in Korea
- works in a hot office

Innovation news

New "Smart Windows" control the sun

Inventors have developed new windows ¹ _____. The windows go darker on parts of the buildings ² _____. This will be very useful for anyone ³ _____. But the windows also go transparent on buildings ⁴ _____ and this will save on electricity bills. The inventors ⁵ _____ say the windows are not expensive and last longer than other types of windows.



8b Using technology

Vocabulary the Internet

- 1 Match these verbs with the groups of words (1–8) to make collocations.

do	download	log on to	search
send	set up	subscribe to	write

- _____ music videos files
- _____ your online bank account
Facebook your email account
- _____ a magazine a daily podcast a blog
- _____ the web the Internet for a pen
- _____ an email a blog a computer program
- _____ an account a tent a company
- _____ a message an email an attachment
- _____ online gaming experiments work

Grammar zero conditional and first conditional

- 2 Choose the correct forms to complete the sentences.

- If it rains / will rain tomorrow, we'll stay at home.
- I'm / I'll be amazed if they win the World Cup.
- If you talk / will talk to Jamie, tell him I got the job.
- He usually texts / He'll usually text when he's on his way home.
- If you don't / won't type the correct password, it won't let you log on.
- If we both see Jennifer, do / will you tell her our news or should I?

3 Grammar extra if, when, or unless

► IF, WHEN or UNLESS

When you talk about things that are generally true (zero conditional), you can use *if* or *when*. There is no difference:
If it's sunny, we like going to the beach. = When it's sunny, we like going to the beach.

When you talk about situations in the future (first conditional), there is a difference:
If I see Fabio, I'll tell him. (It's possible that I will see him.)
When I see Fabio, I'll tell him. (I am definitely going to see him.)

We use *unless* when we mean *if ... not*:
You tell the Fabio the news unless I see him before you.
= You tell Fabio the news if I don't see him before you.

- a Look at the grammar box. Which pairs of sentences have the same meaning? Write ✓ or ✗ in the box.

1

If Kate calls this evening, tell her I'm not here.
When Kate calls this evening, tell her I'm not here.

2

If there's space in the bags, I'll take my hair dryer as well.
When there's space in the bags, I take my hair dryer as well.

3

You won't discover the answer if you don't make a few mistakes in the process.
You won't discover the answer unless you make a few mistakes in the process.

4

We'll go without you if you don't hurry up.
We'll go without you unless you hurry up.

5

Let's go this way unless he says he has a better idea.
Let's go this way if he says he has a better idea.

6

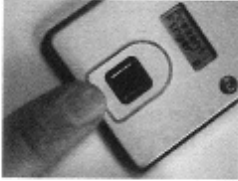
When you don't know the answer to a question, ask your teacher.
Unless you know the answer to a question, ask your teacher.

- b Complete the phone message with *when*, *if*, or *unless*.

Thank you for calling your bank. 1 _____ you would like to hear your account details, press one. 2 _____ you would like to apply for a credit card, press two. Otherwise, stay on the line and we will be happy to help you 3 _____ one of our customer service representatives become available. Please note that we are currently receiving a high number of calls so 4 _____ your call is urgent, we recommend you try again later. Note that we answer calls between eight in the morning and eight in the evening 5 _____ it's a public holiday.

8c Biometrics

Reading a lecture on biometrics



- 1 Read a short lecture about the technology of biometrics (the study of a person's appearance or behavior).

Today I'd like to talk about the technology of biometrics. First of all, what is biometrics? Biometrics is the science of a person's appearance or behavior. So for example, human beings all have an individual physical appearance. They've got different eyes and different hair. And everyone has a different way of walking or moving. So we can also study their behavior.

So how can we use biometrics? Well, it's very useful in the area of security. At the moment if you travel through an airport, you need your identity card or passport. If you go to your bank to get some money you need a card and a special number. But what if you lose your passport? What if you forget your number?

Biometric technology can solve this problem. Your biometric information is your fingerprint, for example. If you press your finger onto a screen, the technology can read the fingerprint and check your identity. Airports already use similar technology that looks inside your eye and also checks your identity. Biometric technology can also recognize your voice and your movements.

Finally, are there any problems with this technology? Well, it's very expensive, so you'll only see it in places like airports, banks, or government offices. Sometimes the technology can make mistakes. However, in the future, the technology will become cheaper and more effective, so it will become more and more important in our everyday lives.

- 2 Read the lecture again and make notes about biometric technology under each heading.

The science of biometrics

Examples of physical appearance: _____

Examples of behavior: _____

Uses of biometrics

Main use: _____

Problems it solves: _____

Parts of the body which the technology can check: _____

Problems with the technology

First problem: _____

Second problem: _____

Prediction for biometric technology

The technology will get _____

Word focus have

- 3 Complete the sentences with these words.

a chat a swim accident hair legs
look lunch time

- 1 Have you had any _____ yet? I can make you a sandwich.
- 2 Michelle is the girl who has _____ like that singer on TV. It's long and blonde.
- 3 Do you have _____ to look at my homework and see if it's correct?
- 4 If you have a sore throat, then I'd better have a _____ inside your mouth.
- 5 Sit down and have _____ with me. How are you?
- 6 I'm going to have _____ later. Do you want to come with me?
- 7 Snakes don't have _____ but they can still move very fast!
- 8 I had a terrible _____ on my bicycle when I was young.

8d Gadgets

Vocabulary technology verbs

1 Match the sentence beginnings (1-7) with the endings (a-g).

- 1 Turn it *b*
 - 2 Plug it
 - 3 When you finish, don't forget to log
 - 4 Recharge it
 - 5 Click
 - 6 You can push
 - 7 This button sends
- a overnight so it's ready in the morning.
 - b on in the back.
 - c into the laptop.
 - d on the link.
 - e a signal in an emergency.
 - f the light forwards or backwards.
 - g off.

Real life asking how something works

2 Put the words in the correct order to make questions.

- a this for what is?
What is this for? _____ ?
- b why you need that to do do? _____ ?
- c how it do you switch off? _____ ?
- d how last the long does battery? _____ ?
- e you do how did that? _____ ?
- f does work it how? _____ ?
- g it turn on I where do? _____ ?
- h what if I other button press this happens? _____ ?

3 Complete the two conversations with these questions.

How did you do that?	What happens if I press this other button?
How does it work?	What's this for?
How do I turn it off?	Where do I turn it on?
How long does that battery last?	Why do you need to do that?

Conversation one

- A: ¹ _____ ?
 B: It's for filming things when you are climbing.
 A: Really? ² _____ ?
 B: Well, you put the small round camera on your helmet. Then this part goes on your belt.
 A: ³ _____ ?
 B: You press the red button.
 A: Oh I see. Hey! That's very cool.
 B: Yes, it's really easy to use.
 A: ⁴ _____ ?
 B: I'm not sure, but quite a few hours. So you can take it with you up a mountain, for example. Then when you get home you just plug it straight into the TV.

Conversation two

- A: I can't make this work.
 B: Let me have a look... Here you go.
 A: ⁵ _____ ?
 B: I pressed the red button.
 A: Oh. ⁶ _____ ?
 B: It moves the map around. Look. And I can press this as well.
 A: ⁷ _____ ?
 B: It shows your location and the place you want to go to.
 A: I see. Oh one more thing.
 B: ⁸ _____ ?
 B: Hold the red button down for five seconds.



Helmetcam

GPS

8e Arguments for technology

1 Writing skill connecting words

Complete the paragraph with these words.

As Finally First For Furthermore In

Email has changed the way we write to each other. ¹ _____, an email is easier and quicker to send than a letter. ² _____ example, with a letter you need a stamp, but an email goes at the click of a button. ³ _____, emails are usually shorter than letters and are more like conversations. ⁴ _____ other words, you can discuss something or solve a problem with emails. ⁵ _____, with emails you can also attach things such as large documents, photos, and video, which is much more convenient. ⁶ _____ a result, the world sends far more emails every day than letters.

Writing a paragraph

- 2 Number the sentences (a–f) in the correct order to make a paragraph.



- a There are many arguments for and against it.
- b CCTV is a type of technology used for security.
- c On the other hand, there is CCTV in our streets and not everyone wants to be filmed.
- d On the one hand, you can protect your house or buildings from criminals.
- e Furthermore, it helps the police catch people.
- f Especially if you are not breaking the law!

- 3 The topic sentence is missing in this paragraph. Choose the correct answer (a–c).

- a Cell phones are as useful as computers.
- b Cell phones have totally changed the way we communicate.
- c Cell phones will change a lot in the future.

Firstly, you can make calls from wherever you are. Secondly, you can send text messages which are cheaper, and also check your emails. Finally, cell phones also give you access to the Internet. In other words, modern cell phones do much more than the traditional phone.

- 4 Use the student's notes below and write three more supporting sentences to complete the paragraph.

The Internet

very fast (Information in seconds)

find any kind of information using a search engine

helps us with everyday information, information for work and studies

The Internet has totally changed the way we find and use information. First,...

Wordbuilding verb prefixes

1 Underline the prefixes in the sentences.

- 1 I need to recharge this battery on my phone.
- 2 I misspelled a word.
- 3 You undercooked this meat.
- 4 He overslept again and was late for work.
- 5 Can you help me to unload these boxes from the car? They're really heavy.
- 6 I really dislike this computer program. It's so complicated to use.

2 Match the underlined prefixes in Exercise 1 with their meaning.

- 1 again re _____
- 2 too much _____
- 3 the opposite action _____
- 4 badly or incorrectly _____
- 5 not _____
- 6 not enough _____

3 Complete the sentences by adding a prefix to the verbs.

- 1 I lost my phone. I need to _____ place it with a new one!
- 2 Don't _____ load the washing machine with clothes. If the load is too heavy, the washing machine doesn't work.
- 3 You made a mistake because you _____ understood the meaning of the word.
- 4 I completely _____ agree with you! There's no way you're right.
- 5 At the moment you are _____ achieving at school. You could get much higher grades.
- 6 My key isn't working. Can you _____ lock the front door?

Learning skills using resources effectively

4 It's important to use different resources when you learn English. Look at these different types of resources that are available to you and circle how often you use each one. Think about the ones you circle *not often* or *never*. How could you start using these resources more effectively?

How often do you...

- | | |
|--|---------|
| • use the reference material at the back of the Student Book? | 1 2 3 4 |
| • watch the Student Book videos more than once? | 1 2 3 4 |
| • listen to the CDs again at home as well as in class? | 1 2 3 4 |
| • ask your teacher when you don't understand something? | 1 2 3 4 |
| • ask your classmates when you don't understand something? | 1 2 3 4 |
| • practice speaking English with your friends outside of class? | 1 2 3 4 |
| • use a dictionary to find information about words? | 1 2 3 4 |
| • search the Internet to read and listen to the news in English? | 1 2 3 4 |

1 = all the time
2 = often

3 = not often
4 = never

5 What other resources do you use to learn English? Tell your class about these resources in the next lesson and find out what they use.

Check!

6 Do the quiz. You can find the answers in Unit 8 of the Student Book.

- 1 What is a type of science which studies the design of animals? _____
- 2 What is an invention which you can use as an alternative to a zip on clothing? _____
- 3 What is the type of lighting which is more effective than normal lighting? _____
- 4 Who is the inventor that invented special glasses that don't need an optician? _____
- 5 What is the gadget that uses satellites and can tell you where you are? _____