

UNIT 11

Discovery and invention



UNIT OBJECTIVES

At the end of this unit, students will be able to:

- understand texts and conversations about discoveries and inventions
- discuss attitudes to discoveries and inventions
- describe how discoveries were made
- ask for and give directions in a building
- write a post (for a website) expressing an opinion

UNIT CONTENTS

G GRAMMAR

- Defining relative clauses
- Articles

V VOCABULARY

- Compound nouns: *science fiction, cash machine, street lights, television programme, road sign, shoe shop, address book, bookshelf, ticket office, key ring, mountain top, mountain climbing, rock climbing, rock star, TV star, TV screen, computer screen, computer game, coffee cup, tea cup, tea bag, shopping bag, shopping centre, city park, car park, car door, kitchen door, kitchen knife, bread knife, bottle top*
- Adverbials: luck and chance: *accidentally, amazingly, as expected, by chance, fortunately, luckily, on purpose, surprisingly, unfortunately*
- Wordpower: preposition + noun: *at home, at university, by chance, for sale, in advance, in hospital, in love, in prison, in school, on business, on purpose, on time*

P PRONUNCIATION

- Word stress
- Sound and spelling: /ɜ:/ /ɔ:/

C COMMUNICATION SKILLS

- Explaining what technology does
- Talking about discoveries
- Asking for and giving directions in a building
- Writing a web post
- Giving opinions

GETTING STARTED



OPTIONAL LEAD-IN

Books closed. Write *robot* on the board. Say: *Robots can say words, but they can't have a conversation.* In pairs, students think of other things that robots can or can't do, e.g. *Robots can walk, pick up something, take messages, clean floors, rescue people at sea, travel into space, explore inside volcanoes. Robots can't feel emotion, take care of someone, breathe, think, learn new skills.* Ask students to share their ideas with the class. Encourage them to give examples if they know of any.



a Ask students to look at the picture and tell you what they can see. In pairs, students read and discuss the questions. Monitor and help students with any vocabulary they may need, e.g. *bark, wag its tail, fetch, dog hairs, take the dog for a walk, feed, vet, charge up batteries.* Ask students to share their ideas with the class. If you wish, give students information from the Culture notes below.

Suggested answers

- 1 playing with a ball
- 2 to let him have some fun / for company
- 3 perhaps – it would be warm and friendly; perhaps not – have to feed it, it makes a mess, it needs walks
- 4 nothing; it can't lick you, communicate



CULTURE NOTES

The picture shows the AIBO, an artificial intelligence robot. Several models of the robot dog were produced by Sony between 1999 and 2006. The AIBO had many abilities, including understanding commands, reacting to touch, chasing a ball, barking, dancing and even walking to a docking station to charge its own batteries. The AIBO was the first consumer robot to be offered to the public and the first model cost around \$2000.



b Students discuss the questions in pairs and report back to the class. Write the best ideas on the board. Ask the class to vote for their favourite 'new robot' from the descriptions on the board.



EXTRA ACTIVITY

Ask the class: *Do you think robots will be good for family life? Why / Why not?* Divide the class into two groups. Ask one group to think of reasons why robots will be good, and the other group to think of reasons why they won't. Ask for reasons from both groups in full group feedback.

11A It's a robot that looks like a human



OPTIONAL LEAD-IN

Books closed. Ask students if they have been to see a film at the cinema recently and find out from them what films are currently on. Ask students to tell you the names of the films, but also the genre, e.g. *comedy, drama, animated film, thriller, documentary, science fiction film*. Find out if any students have a particular film genre they enjoy.



CULTURE NOTES

Books and films in the science fiction genre speculate about future events and technology, and their effects on the human race, but the stories are not fantasy. The stories always show a good understanding of scientific principles. Some of the most popular science fiction authors are Aldous Huxley (*Brave New World*), H.G. Wells (*The Invisible Man*), and Arthur C. Clarke (*2001: a Space Odyssey*). *Return from the Stars* by Polish author Stanislaw Lem tells the story of an astronaut returning to Earth to find it completely changed. It was translated into English in 1980, 19 years after it was first published.

Fahrenheit 451 by American author Ray Bradbury tells the story of a future society where reading or even owning books is illegal. The title refers to the temperature that paper catches fire. There were many ideas in this book which have later become reality including large-screen TVs, in-ear wireless headphones, electronic surveillance and more. The novel has won many awards.

Back to the Future is an extremely successful trilogy of films directed by Robert Zemeckis and produced by Steven Spielberg. The first film was released in 1985 and used state-of-the-art special effects which are now common in action adventure movies. The films starred Michael J. Fox (pictured on SB p.109, top right) who travels in time both to the past and to the future in a car which is adapted into a time machine. *A.I.* stands for Artificial Intelligence. The film of this name was released in 2001 and was written, directed and produced by Steven Spielberg. It was based on a 1969 short story *Super-Toys Last All Summer Long* by British author Brian Aldiss. The film starred Jude Law and child actor Haley Joel Osment (pictured on SB p.109, top left). Haley Joel Osment plays a child-like robot called David who is the result of a scientist's experiment to make a robot who can love and be loved. The *Iron Man* films are based on the Marvel comicbook superhero (pictured on SB p.109, bottom) who first appeared in comicbooks in 1963. *Iron Man 3* (2013) is one of the highest-grossing films of all time. In the films, Robert Downey Jr plays engineer Tony Stark who creates a suit of armour which gives him superhuman strength and the ability to fly. In time the armour becomes part of Stark's body, turning him into a cyborg.

The film *Minority Report* (2002) is a science fiction thriller based on a short story by Philip K. Dick of the same name, starring Tom Cruise, Colin Farrell and Samantha Morton. Directed by Steven Spielberg, this film was one of the first to make extensive use of digital production. The story features *precogs*, mutated humans who can see into the future. Special *precrime* police officers try to use this information to prevent crimes being committed.

At the end of this lesson, students will be able to:

- use defining relative clauses
- read and understand a text about inventions from science fiction
- understand a person talking about inventions
- use compound nouns
- talk about new technology

1 READING AND LISTENING

- a In pairs, students look at the pictures and the film and book titles on this page and tell their partner what they know about each one. Take feedback and find out which students have read the books or seen the films. Elicit what they know about them and ask if anyone has both read the book and seen the film. Ask: *Did you prefer the book or the film? Why?*

Answer

science-fiction stories

- b Ask students to read the title of the article and guess what it is about (some inventions were first thought of by science fiction writers, but went on to become a reality). They then read the introduction to check their ideas and to answer the question.

Answer

Both cash machines and e-book readers appeared in stories about thirty to forty years before they were invented.

- c Ask students who have seen all or some of the films featured in the article to tell the class what they think were the most interesting technological inventions and gadgets featured in these films. Put these on the board and then ask students to read the article to check if they are mentioned. If not, they should write down the other inventions that are talked about. Check answers as a class.

Answers

Back to the Future II: flying cars

AI: androids / robot children

Iron Man: cyborgs

Minority Report: predicting crimes before they happen; personalised advertising



VOCABULARY SUPPORT

android – a robot that is made to look like a person

billboard – a very large board on which advertisements are shown, especially by the side of the road

break the law (B2) – do something against the law

personalised – make something suitable for the needs of a particular person

psychic – a person who has the ability to predict the future

robotic – adjective from *robot*




LANGUAGE NOTES

Sci fi is a common abbreviation of *science fiction*. It can also be abbreviated to *SF*.

- d 3.34 List the technologies from c on the board and ask the class if they think they exist in real life yet. Elicit a 'yes' or 'no' answer for each. Then play the recording for students to find out whether they were right.

Answers

flying cars – yes
androids – no
cyborgs – yes, almost
predicting crimes – yes
personalised advertising – yes

- e**  **3.34** Students listen to the recording and note down the differences between the real technology and the book/film version. Encourage them to compare their ideas with a partner before you check answers as a class.

Answers

There are flying cars (but very expensive and you need a licence).
There aren't robots that can love their owners yet, but there are robots that appear friendly.
There are cyborgs – doctors often give people robotic hands and arms. There is even an 'Iron Man' suit which allows people who can't use their legs to stand, walk and climb stairs and also makes people ten times stronger – only for use in hospitals but possibly in development for rescue workers.
Police can't exactly predict crimes but a computer program can say where and what kinds of crime might occur.
Personalised advertising is possible: it recognises the age and sex of a person and when you look at one, it chooses an advert for something it thinks you will like. It also records how long you look at the advert and how close you stand.


Audioscript

There aren't any road signs in the sky yet, but just like in *Back to the Future II*, flying cars are real. The Terrafugia Transition is a car which can fly for 800 kilometres at a speed of 185 kilometres an hour. It has two seats and wings that fold up, so it can be driven on a road, too. But it isn't cheap – it costs about €220,000. And to fly the Terrafugia, you have to have a pilot's licence.

People who have seen *AI* might be happy to hear that no one can make robots that love their human owner yet. But scientists are trying to make friendly robots: One example is Kirobo – a Japanese robot that was designed as a friend for astronauts. Kirobo goes with the astronauts into space. It recognises their faces and says "hello" in Japanese when it sees them. It also gives them messages from people on Earth.

You might not know it, but there are already many cyborgs – doctors give people robotic hands and arms every week. And, these days, 'Iron Man' suits are also available ... well, almost. In Japan, Cyberdyne have created a suit which allows people who can't use their legs to stand, walk and climb stairs. The suit also makes the person who wears it five to ten times stronger. At the moment, the suit is produced for use in hospitals, but Cyberdyne also want it to be used by rescue workers to lift heavy objects and get to injured or trapped people more quickly after an accident or disaster.

In the United States, the Memphis Police Department is trying to predict the future, just like in the film *Minority Report*. They don't have psychics, but they do have a computer program called *Blue CRUSH*. The program can't tell the police exactly who will break the law, but it can tell the police where it might happen and even what kind of crime it might be. Crime has gone down by 30% since they started using the program. ... The Japanese company NEC has invented billboards which are similar to the ones in *Minority Report*. The billboards know how old you are and if you are male or female. And when you look at one, it chooses an advert for something it thinks you will like. It also records how long you look at the advert and how close you stand. This measures your interest in the advert. The billboards are already used in train stations in Tokyo.


- f**  **3.34** Read through the sentences and play the recording again for students to do the true/false task. Check answers as a class. You may wish to help students with words in the Vocabulary support box.

Answers

- 1 T
- 2 F – You have to have a pilot's licence.
- 3 F – It was designed as a friend for astronauts.
- 4 T
- 5 T
- 6 T
- 7 F – Crime has gone down by 30%.
- 8 T

VOCABULARY SUPPORT

fold up (B1) – you can bend it to take up a smaller space
recognise (B1) – know someone / something because you have seen them before
rescue (worker) (B1) – person who saves others
trapped (B2) – unable to move, get out of a place

- g**  Students discuss the questions in pairs. Monitor and help with vocabulary as needed. Point out errors for students to self-correct. Take feedback as a class and ask students to give examples of the most interesting or extraordinary new technologies they have heard/read about.

EXTRA ACTIVITY

In pairs, students choose a science-fiction film that has not been discussed so far in class. They write a summary of the film like the ones described in the article, pointing out the interesting technology in the film. Students read out their summaries or circulate them in the class. The rest of the students try to guess which film they are describing.

2 GRAMMAR Defining relative clauses

- a** Books closed. Ask: *What do you call robots that look like humans?* (androids) *What do you call the place where astronauts go?* (space) Ask students to look at the words and complete the definitions, using what they remember from the reading and listening to help them. Check answers as a class.

Answers

- 1 Psychics 2 Androids 3 Cyborgs 4 Billboards 5 Space

- b** Draw students attention to the underlined words in the definitions. Elicit or explain that the function of these words is to refer/relate back to the word you are defining and that they are called *relative pronouns*. Students complete the rules individually and compare their ideas with a partner before you check answers as a class.

Answers

who; that which; that where


LOA TIP ELICITING

Ask students to look at the completed sentences in 2a. Ask: *Are the underlined words giving more information about the subject or the object of the sentence?* (the subject) Ask: *If we take out these words, do the sentences still make sense?* (no) Ask: *What do we call these words?* (relative pronouns)

- c** Answer the questions as a class.

Answers

- 1 which 2 who 3 where

- d ▶  3.35 Students read the information in Grammar Focus 11A on SB p.162. Play the recording where indicated and ask students to listen and repeat. Students then complete the exercises in Grammar Focus 11A on SB p.163. Check answers as a class. Tell students to go back to SB p.109.

Answers (Grammar Focus 11A SB p.163)

- a 1 which 2 who 3 where 4 who 5 which
6 where 7 which 8 who
b 1 where 2 who, which, that 3 which, where
4 who, which, that 5 which, where 6 who, which, that
7 who, where
c 1 the actor who 2 the shoes that/which 3 a shop where
4 a device that/which 5 The man who
6 camera that/which broke



Students sometimes use *what* instead of *that/which* in relative clauses, e.g. *This is one of the best films what stars Brad Pitt.* (Correct form = *This is one of the best films which/that stars Brad Pitt.*)

- e Read through the examples with the class and elicit what they are describing. Write: *It's a person who ... It's a thing which ...* on the board and say that these are very useful phrases for defining and explaining. Give the beginning of some definitions and elicit different possible endings from the class, e.g. *a teacher is a person who ...* (helps students to learn); *a dictionary is a book that* (you can look up new words in).

Suggested answers

A doctor, nurse B bed, (sofa)

- f ▶ Divide students into pairs and assign A and B roles. Student A turns to SB p. 129. Student B turns to SB p.131. Explain that they need to describe the words for their partners to guess, using relative clauses. Allow two minutes for each student's descriptions. Monitor and point out errors for students to self-correct. Ask some students to tell you some of their descriptions. Who described most things? Ask students to describe any remaining words as a class.



In pairs, students role play a conversation between a teenager and a great-grandparent. The great-grandparent asks the teenager to explain some modern technology, e.g. *What's an email? How does a smartphone work?*. The teenager describes the item for their great-grandparent. They then swap roles. Choose a pair to role play a conversation for the class.

3 VOCABULARY Compound nouns

- a Write the word *driving licence* on the board and ask whether it is a noun or a verb (a noun). Explain that nouns that are made up of two words like this are called *compound nouns*. Ask students to do the matching task and check answers as a class.


Answers

science fiction cash machines street lights
television programme road sign

- b Go through the words with the class and elicit whether each one is singular or plural. Establish that they are all in the singular form.

Answers



singular

- c ▶  3.36 Students complete the exercises in Vocabulary Focus 11A on SB p.140. Go through the two points in the Tip with the class and check understanding. Check answers to Exercise a. Play the recording where indicated for students to decide on the stressed syllables in Exercise b and repeat. Check answers to Exercises d and e and monitor the conversations in Exercise f. Then tell students to go back to SB p.109.

Answers (Vocabulary Focus 11A SB p.140)

- a 1 shoe shop 2 address book 3 bookshelf 4 ticket office
5 key ring 6 television programme
7 street lights / streetlights 8 road sign 9 cash machine
10 science fiction
b 1 shoe shop 2 address book 3 bookshelf 4 ticket office
5 key ring 6 television programme 7 street lights
8 road sign 9 cash machine 10 science fiction
1 the first one 2 science fiction
d mountain top, mountain climbing, mountain centre; TV star, TV screen, TV game; bread knife; coffee cup; shopping bag, shopping centre; city park, city centre; kitchen knife, kitchen door; computer screen, computer game; tea bag, teacup; rock climbing, rock star; car park, car door; bottle top
e 1 computer games 2 TV screen / computer screen
3 rock climbing / mountain climbing 4 rock star / TV star
5 rock star / TV star
6 shopping centre / city park / computer game

4 SPEAKING

- a  Ask the class if anyone has recently bought or started used a new piece of technology and elicit more information about it. Ask individual students what was the last piece of technological equipment they bought and why they bought it.
- b  Individually, students think about the inventions in the pictures and then compare answers with a partner.
- c Take feedback as a class and compare different suggestions from the pairs about the gadgets. (top left) Smoke detectors are fitted to the ceiling inside a building. A smoke detector sounds an alarm when smoke is present. The alarm allows people to either prevent or escape a fire. Deaths due to fire have been reduced by 50% since smoke detectors became easily available. This smoke detector is in the shape of a bird which 'chirps' to warn you of smoke. (top right) This is an induction hob. Electromagnets in the hob are used to heat pans by induction. This means only the pan heats up and not the hob, which is energy-efficient and safer. (bottom) This is a charging station. Phone chargers are put inside the box and covered with artificial grass. This keeps a number of different phone chargers in one place and looks more natural.

Answers

top left: smoke detector top right: induction hob
bottom: charging station

ADDITIONAL MATERIAL

- ▶ Workbook 11A
- ▶ Photocopiable activities: Grammar p.224, Vocabulary p.248

11B I think they discovered it by chance


At the end of this lesson, students will be able to:

- read and understand texts about discoveries
- use articles correctly
- use adverbials related to luck and chance accurately
- talk about discoveries and inventions
- relate experiences about unexpected events

OPTIONAL LEAD-IN

Books closed. Play *Backs to the board*. Split the class into two teams. One student from each team sits with their back to the board. Write a word on the board. The students who can see the board must explain the word to their teammate who cannot see the board. They may not use their own language. The person who guesses the word from their team's clues wins a point for their team. Use these words in this game: *statue, stone, metal, soldier, diamond, cave, painting, microwave, farmer, popcorn, climber*.

1 READING

- a**  Students match the headlines with the stories and pictures. Check answers as a class and ask which story they would like to read most, and why.

Answers

1 second story 2 third story 3 first story

- b** Ask students to read the stories and answer the questions about each one. You may wish to help students with words in the Vocabulary support box at this point. Check answers as a class. If you wish, give students information from the Culture notes below.

Answers

Scientist discovers how to cook food in seconds

- 1 Percy LeBaron Spencer
- 2 working on radar for the army
- 3 the microwave oven

5,000-year-old body found in the Alps

- 1 Helmut and Erika Simon
- 2 hiking in the mountains in Italy
- 3 one of the oldest, most complete human bodies

Farmers uncover ancient army in the fields

- 1 local farmers
- 2 digging and looking for water
- 3 thousands of clay/terracotta soldiers buried underground

LANGUAGE NOTES

Point out the difference between *inventions* and *discoveries*. *Inventions* are things that people create/imagine/build. *Discoveries* are things that already existed but we find out about them.

VOCABULARY SUPPORT

archaeologist (C1) – someone who studies ancient cultures by looking for and examining their buildings, tools, and other objects

bury (B1) – to put something into a hole in the ground and cover it

clay – a kind of heavy, sticky earth, soft when wet and hard when dry or baked, which is used for making pots and other objects

curious (B1) – wanting to know or learn about something

dig (B1) – to make a hole in the ground by moving some of the earth away

hike – to walk a long distance especially in the countryside

melt (B2) – go from solid to liquid because of heat

pop (C2) – sudden loud, short sound like a small explosion

popcorn (B1) – seeds of corn that have been cooked to break open into soft, light balls and are eaten as a snack

radar – a system that uses radio waves to detect objects you cannot see

terracotta – a hard, baked, red-brown clay

LANGUAGE NOTES

Some students confuse *hope* and *expect*. Explain that we use *hope* when we want something to happen and *expect* when we think it will happen. Elicit some examples to show the meanings: *I hope I pass the exam. (I'm not sure.) I expect I'll pass the exam. (I think I will.)*

CAREFUL!

- When we use a compound noun as an adjective like this, all nouns remain in the singular form singular, e.g. *a multi-words verb* (Correct form = *a multi-word verb*); *a 5,000-years-old body* (Correct form = *a 5,000-year-old body*); *a ten-years-old boy* (Correct form = *a ten-year-old boy*, BUT *The boy was ten years old*); a five **pages**-story (Correct form = *a five-page-story*).
- In headlines, articles (and auxiliaries) are often left out, e.g. *5,000-year-old body discovered in Alps!* = *A 5,000-year-old body has been discovered in the Alps.*

CULTURE NOTES

Percy LeBaron Spencer created the first microwave oven in 1947. It was about two metres tall and weighed 340 kilograms. It cost between \$2,000 and \$3,000. It wasn't until 1967 that an affordable microwave was on sale for \$495. Spencer didn't profit from his invention – he was paid a fee of \$2.00 by his company!

Ötzi the Iceman is thought to have been 1.65 metres tall, about 50 kilograms in weight and about 45 years old. Scientific tests have shown where he lived and what his last meals were – red deer, herb bread, grain and fruits. They also show that he looked old for his age, had been quite ill just before his death and that he had tattoos. He was wearing a coat, leggings and well-made shoes.

The Terracotta Army includes soldiers and horses and are representations of Qin Shi Huang, the first Emperor of China. It is believed that the army is a kind of funeral art and that it was buried with the Emperor to protect him after death.

- c** Students read the texts again and answer the questions individually. Check answers as a class.


Answers

- 1 He put a small bowl of popcorn in front of the machine.
- 2 They thought that it was the body of an unlucky mountain climber. They tore the clothes and broke one arm.
- 3 They believe most of them are still buried underground.

EXTRA ACTIVITY

Write on the board: 700,000 / 6,000 / 1991 / 5,000 / 2,200 and ask students what the numbers refer to in the text.

(700,000 people who helped make the army; 6,000 – approximate number of figures; 2,200 – the terracotta army was made 2,200 years ago; 1991 – 5,000 – age of body when the body of the Iceman was discovered)


- d**  In pairs, students discuss the questions before you take feedback as a class. Take a class vote on the order of the importance of the discoveries and elicit some ideas from the group about important discoveries in their lifetimes.

2 GRAMMAR Articles

- a** Books closed. Read the first sentence, leaving out some of the articles: *He put ... small bowl in front of the machine. It started popping and jumping out of ... bowl.* Ask students what words are missing (*a, the*) and what we call this kind of word (articles). Read through the sentences and rules and ask students to match them individually. Check answers as a class.

Answers


a 6 b 3,4 c 1 d 2,5 e 7

- b**  **3.37** Students read the information in Grammar Focus 11B on SB p.162. Play the recording where indicated and ask students to listen and repeat. Students then complete the exercises in Grammar Focus 11B on SB p.163. Check answers as a class. Tell students to go back to SB p.111.

Answers (Grammar Focus 11B SB p.163)

a 1 A 2 Ø 3 the 4 A 5 An 6 a 7 a 8 Ø 9 the 10 An
b 1D 2D 3S 4S 5D 6S
c 1 Ø 2 Ø 3 a 4 the 5 a 6 a 7 The 8 Ø 9 a 10 The 11 a 12 the 13 the/Ø

- c** Ask students to look at the picture and title and tell you what the picture shows. Ask: *What do you think the article will be about?* Students read the article to check their ideas. Ask: *Which articles could we add to the title?* (a new species, on the menu). Ask: *Which auxiliary could we add? (was discovered)* Students then read the text and complete it with the correct articles. They do this individually and then compare answers with a partner.

- d**  **3.38** Play the recording for students to check their answers.

Answers

1 the 2 a 3 a 4 a 5 a 6 the 7 the
8 the 9 the 10 a 11 no article 12 a
13 the 14 the 15 the 16 the 17 a

VOCABULARY SUPPORT


bench (B2) – long seat for two or more people

nearby (B1) – not far away

- e** Students answer the questions in pairs. Take feedback and check answers.

Answers

- 1 Ngo Van Tri
- 2 he thought they looked unusual; to send to a biologist in America
- 3 by plane
- 4 The lizards were cooked and eaten.
- 5 in a nearby restaurant

- f**  Students work in pairs. Ask them to take turns covering the story and using the prompts to retell it. Monitor and correct students' pronunciation as appropriate and listen for appropriate usage of articles. Point out errors for students to self-correct where necessary.

EXTRA ACTIVITY

Ask students if they have ever eaten lizards. What other unusual things do students eat in their countries? What would they never eat? Why?

3 VOCABULARY

Adverbials: luck and chance

- a Write the highlighted adverbials from the four stories on the board. In pairs, students discuss the meanings. Check their ideas as a class. Use some of the adverbials in sentences and concept check. Keep the adverbials on the board to refer to later.



LOA TIP CONCEPT CHECKING

Use concept questions to check the understanding of the adverbials in the sentences you have on the board. For example, to check the meaning of *by chance* in the sentence *I met James by chance in the station*, ask: *Did I arrange to meet James?* (no) *Was it a surprise to meet James?* (yes)

Answers

as expected – this was something we thought was going to happen
by chance – it wasn't planned
accidentally – it wasn't planned
amazingly – it was a real surprise
fortunately – it was a good/lucky thing
surprisingly – it was a surprise
on purpose – it was planned
unfortunately – it was a bad / an unlucky thing
luckily – it was a lucky thing




CAREFUL!

Watch out for mistakes: *unfortunatly* or *unfortunatelly*.
(Correct spelling = **unfortunately**.)

- b Individually, students search the texts for the opposites of the words and phrases in the table. They compare their answers with a partner before you check as a class.


Answers

1 fortunately 2 luckily 3 by chance
4 accidentally 5 amazingly 6 surprisingly

- c  3.39 In pairs, students take turns to practise pronouncing the words out loud. They underline where they think the main stress falls. Play the recording for them to listen, check their answers and repeat.

Answers

luckily, fortunately, accidentally, by chance, unfortunately,
surprisingly, amazingly, on purpose, as expected


- d Read through the task with the class and give students a couple of minutes to prepare their sentences using three of the phrases from c. Monitor and help with vocabulary as necessary.
- e  Take feedback and ask students to share some of their examples with the class. Find out which student has written about the most interesting/amusing/frightening occasion.



EXTRA ACTIVITY

In pairs, students take turns to make up a sentence and give an adverbial to begin the next sentence for their partner to complete, e.g. *I opened the classroom door. Surprisingly ...* (the room was empty). Take feedback and ask students to share some examples with the class.



4 SPEAKING

- a  Divide the class into pairs and assign A and B roles. Student As read the texts on SB p.128 and Student Bs read the texts on SB p.132. Explain that they are each going to read about three different accidental discoveries. They can use their dictionaries to check the meaning of any unfamiliar words. Monitor and help with vocabulary as necessary. Students tell their partners their three stories. One of the stories is not true and the pairs decide together which one it is. Take feedback as a class and ask students to share their ideas and say why they think the stories they have chosen are untrue. Give the answers from SB p.131.

Answers

Car keys were not invented by an American businessman called Spencer.
The exercise bike was not invented by Hans Weger.

ADDITIONAL MATERIAL

-  Workbook 11B
 Photocopiable activities: Grammar p.225, Vocabulary p.249

11C Everyday English

It's straight ahead



OPTIONAL LEAD-IN

Write *sat nav* on the board. Ask students if they have a sat nav in their car. Ask: *Is a sat nav an essential invention? Should you have one in your car?* Divide the class into small groups. Some of the groups think of reasons why sat navs are essential, e.g. *You can find new places. You don't need to stop to look at a map.* Some of the groups think of reasons why the sat nav is not a good invention, e.g. *You can look at road signs instead. It is dangerous to take your eyes off the road. Sat navs are always out-of-date.* Set up short debates between the groups. Now take a class vote on students' real opinions.

1 LISTENING

- a** Ask the class if they are good at knowing where they are and elicit examples from individual students of what they would do if they got lost in a town or city. In pairs, students ask and answer the questions. Encourage them to give details and extend their answers. Take feedback as a class on the most interesting items their partners talked about. Extend by asking how many students have apps on their phones to find the way and how useful these are.
- b** **3.40** Ask students to tell you what has happened to Annie in the story so far and the reason why she has come to visit Mark at his office. Play Part 1 of the video or play the audio recording for the class to find out why she gets lost. Check the answer together.

Answer

Annie can't remember the receptionist's directions to Mark's office.

Video/audioscript (Part 1)

ANNIE Excuse me. Can you tell me where the reception is?
PERSON It's over there, by the trees. Can you see the doors? And the sign that says reception.
A Oh, yes. Thanks very much.
P You're welcome.
RECEPTIONIST Good afternoon.
A Hello. I'm here to see Mark Riley.
R What's your name, please?
A It's Annie Morton.
R OK, I'll let him know you're here. Oh, hello Mark, it's Sandra here at reception. I've got Annie Morton here to see you. OK, thanks. Bye. Yes, he's expecting you. He said you can go up to see him. Have you been to his office before?
A No.
R OK. It's on the first floor. So, go up the stairs and turn left. Go through the door and turn right. Then go down the corridor and it's the first door on the right.
A Fine. Thank you.

AUDIO ONLY

A Sorry, I got lost. Could you tell me where the office is again, please?
R Yes, of course. So, first go up the ...

- c** **3.40** Elicit from students what they can remember about the directions that the receptionist gives Annie. Write any phrases they manage to produce on the board. Then play Part 1 of the video or play the audio recording again for the class to complete the directions in 1c. Check answers as a class.

Answers

1 first 2 up 3 left 4 door 5 right 6 down
7 first 8 right

At the end of this lesson, students will be able to:

- use phrases to ask for and give directions in a building
- check information
- differentiate between /ɜ:/ and /ɔ:/
- understand someone asking for and being given directions



LANGUAGE NOTES

Make sure that students know the words and phrases:

first floor ground floor top floor corridor

In many countries, *first floor* is the same as *ground floor* in the UK.



EXTRA ACTIVITY

Give students two minutes to memorise the directions in 1c. Students role play the conversation between Annie and the receptionist. The receptionist gives instructions and Annie mimes following them. Then students swap roles. Monitor and point out errors for students to self-correct.

2 USEFUL LANGUAGE

Asking for and giving directions in a building

- a** **3.41** Ask students to complete the question, and then play the recording to check. Check the answer as a class and focus on the position of the verb (*is*) at the end of the sentence.

Answer

Excuse me, can you tell me where the reception is?



LOA TIP DRILLING

Give a short transformation drill to practise the structure, e.g.

Say: *Reception. Can you tell me where the reception is?*
(Gesture for students to repeat.)

Students: *Can you tell me where the reception is?*

Say: *Mark's office*

Students: *Can you tell me where Mark's office is?*

Say: *the language lab*

Students: *Can you tell me where the language lab is?*

Say: *the cafeteria*

Students: *Can you tell me where the cafeteria is?*

- b** **3.42** Individually, students match the phrases with the pictures. Play the recording for them to check their answers. Play it again or model the phrases yourself for students to repeat. Ask them to underline the stressed word or words in each sentence and to pay attention to correct sentence stress and intonation.

Answers

1 b 2 f 3 c 4 g 5 h 6 d 7 a 8 i 9 j 10 e

- c** In pairs, students take turns to cover the phrases and remember the directions for each picture. Uncover and check.

3 CONVERSATION SKILLS

Checking information

- a 3.43 Ask the class what they think Annie does next after she gets lost and elicit some ideas – e.g. she goes home, she goes into another office to ask directions, she goes back to reception, etc. Then play Part 2 of the video or play the audio recording for them to check their ideas.

Answer

She goes back to (the) reception (and asks again).

Video/audioscript (Part 2)

- ANNIE** Sorry, I got lost. Could you tell me where the office is again, please?
RECEPTIONIST Yes, of course. So, first go up the stairs to the first floor and turn left. Then go through the door and turn right.
A So go up the stairs to the first floor and turn left. Then go through the door and turn right.
R Yes. Then go down the corridor and it's the first office on the right.
A Sorry, the fourth office?
R No, the first.
A Right, I think I've got that.
R Good.
A So can I just check? Go up the stairs and turn right ...
R No, turn left.
A Left! Then go through the door and turn left ... no ... right.
R That's it.
A Thanks very much

- b 3.44 Students read and listen to the three exchanges based on the conversation and match the underlined phrases with their uses. Check answers as a class. Then play Part 2 of the video or play the audio recording again for students to listen and repeat the conversations.

Answers

to check information by repeating it: 1, 2, 4
 to show we understand: 3

- c Choose a place in the building you are in and direct students to it. e.g. *Go out of the classroom and turn right. Go down the corridor and turn left. Go down the stairs and through the big glass doors at the bottom. Where are you?* Elicit the correct answer, then tell the class that you are going to direct them again, but this time you want them to check the information and show they understand, using the phrases in b. Repeat the directions, pausing where appropriate to elicit the checking or confirming phrases from the class. Then give students a couple of minutes to prepare their own directions. They take turns to read their phrases to their partner who listens and repeats the information to check it's correct. Monitor and correct students' pronunciation as appropriate and listen for correct use of the target phrases.

- d 3.45 Tell students that now they're going to hear the conversation between Mark and Annie. Look at the question and play Part 3 of the video or play the audio recording for students to answer. Check the answer as a class.

Answer

Mark thinks Annie has a good chance.

Video/audioscript (Part 3)

- MARK** Obviously, I can't promise anything. But I think you've a really good chance of getting a job here.
ANNIE Thanks, Mark! That's great. You've helped me so much.
M Not at all. You've got a really good CV and lots of experience. I'm sure my boss will be very impressed.
A I hope so! Anyway, I'll let you get back to your work now.
M OK.
A Oh, and have fun at the gym with Leo tomorrow!
M Thanks. I'm sure it'll be good. Do you want me to walk down with you or ...?
A No, it's OK – I know the way out. Thanks again.
M Not a problem. See you soon.
A Bye.
M Bye.

VOCABULARY SUPPORT

a good chance of – quite likely that

CV (B1) – document that describes your education and experience

impressed (B2) – think something is very good

- e Ask the class whether they would give Annie a job at their company and elicit reasons as to why or why not.

4 PRONUNCIATION

Sound and spelling: /ɜ:/ and /ɔ:/

- a 3.46 Tell the class that they are going to hear two words with different vowel sounds. Play the recording for students to listen and repeat. Contrast the two sounds /ɜ:/ and /ɔ:/ for students to repeat after you in chorus. Do this several times to give them practice in producing as well as hearing the sounds.

- b In pairs, students take turns to say the pairs of words, circling the word with the /ɜ:/ sound. Check answers as class. Model the word pairs for students to repeat after you.

Answers

1 third 2 Thursday 3 thirty 4 work 5 bird

- c 3.47 Play the recording for students to circle the words they hear. Check answers as a class.

Answers

1 fourth 2 Thursday 3 thirty 4 work 5 board

5 SPEAKING

Ask the class to look at the plan of the building and go through the key with them. Check understanding of any words they do not know. Students work in pairs and take turns to ask for and give directions from the entrance of the school. Remind them to check and confirm information. Monitor and correct students' pronunciation as appropriate and listen for correct usage of the target language from this lesson.

ADDITIONAL MATERIAL

- ▶ Workbook 11C
- ▶ Photocopiable activities: Pronunciation p.285, 286
- ▶ Unit Progress Test
- ▶ Personalised online practice

11D Skills for Writing

In my opinion, it's because of the Internet



OPTIONAL LEAD-IN

Books closed. Individually, students write down an invention that they have used today and think about how their lives would be different without it. Students share their ideas with the class, e.g. *My alarm clock is an excellent invention. Without it, I might still be in bed! Or my mum would need to wake me up every day.*

1 LISTENING AND SPEAKING

a Ask students: *Is there one new invention that would have helped you today?* Students can talk about this in pairs and then tell the class in feedback, e.g. *a time machine to get them to school faster*. Ask students to look at the pictures and talk about what they can see and what kinds of inventions they might be. Elicit or point out that the man is saying *Hello! How are you?* in Spanish. Take feedback as a class and write on the board students' different ideas about what the three inventions might be.

b **3.48** Tell students that they are going to hear people on a radio programme talking about the inventions in the pictures. Play the recording for the class to listen for general meaning and to complete the first row of the table with the invention each person talks about. Check answers as a class.

Answers

Amir – new kind of car engine

Uttu – artificial meat

Pierre – device to put in ear to translate languages

Audioscript

HOST Hi, welcome to the show. Today we're looking at great inventions for the future. What really useful inventions do you think we need? People have called in to the show to tell us their ideas. First up we have Amir. Hi, Amir.

AMIR Hi.

H So Amir, tell us about what invention you'd like to see.

A I think the most important invention we need is a new kind of car engine that doesn't need petrol. There are too many cars in the world already, and as countries become richer, more and more people will want a car. That will be terrible news for the environment. But imagine a world with clean cars and no more pollution to worry about! I'm sure it will be invented soon. We already have electric cars, but I think it will be something different, maybe something like a car that runs on air. I'm sure someone will invent something to solve the problem. I hope so, anyway.

H Thanks, Amir. That's a great invention. Next on the line we have Uttu. Uttu, tell us about your invention.

UTTU Hi, well, one really useful invention would be artificial meat that's cheap and tastes good and which doesn't need cows, sheep or chickens to produce it. It sounds like science fiction, but in fact they've already invented it in a way. Amazingly, they've produced beef in a laboratory, but it cost thousands of pounds to make. But that's the same with all new inventions; they're always expensive at the start. So, I think it will happen and it'll be really good, because all the fields we use to grow food for cows could be used for something else – to grow vegetables or plant trees, for example.

At the end of this lesson, students will be able to:

- understand people talking about inventions
- read and understand a text about inventions
- use phrases to give opinions, results and reasons
- write a web post giving an opinion

H Thanks, Uttu. Artificial meat! Wow, that sounds scary ... Anyhow, last up we have Pierre. Hi, Pierre.

PIERRE Hi.

H So Pierre, tell us about your idea for a great invention.

P Well, a really useful invention I read about was a device that you could put in your ear and it would translate languages for you. You wouldn't need to study for hours and hours to learn a foreign language. You could just put it in your ear when you went on holiday to foreign countries and you'd understand everything everyone was saying to you. It would help people to communicate and would be very useful for business people or for politicians. But it wouldn't be very good news for teachers. Fortunately, for them, it's probably impossible to make such a device, or at least it will take many years.

H Cool. I'd love that invention! Thanks for those great ideas. Who knows which of them will happen! We can only wait and see!



VOCABULARY SUPPORT

artificial (B2) – not natural or real

device (B2) – a piece of equipment that is used for a particular purpose

laboratory (B1) – a room used for scientific work

pollution (B1) – damage caused to water, air, etc. by harmful substances or waste

run (on) (C1) – uses a supply of power to work



LANGUAGE NOTES

The host uses idiomatic phrases to sequence the people he talks to: *First up* (*Firstly*) and *Last up* (*Lastly/Finally*).

c **3.48** Read through the remaining two questions in the table. You may wish to help students with the items in the Vocabulary support box at this point. Then play the recording again for students to complete the rest of the table. You may need to play the recording more than once. Check answers as a class.

Answers

Amir – clean cars so no more pollution; yes (someone will invent something to solve the problem)

Uttu – cheap, tastes good, fields used for growing food for cows can be used for something else; yes (I think it will happen and it'll be really good)

Pierre – no need to study, would help people to communicate; no (it's probably impossible or will take many years)

d Individually, students decide if they think the inventions are a good idea or not and why and any other ways they might be able to think of to solve the same problem. Give them a couple of minutes to do this and tell them to make notes about their ideas – at least two or three lines for each invention.

e In small groups, students compare their ideas from d. Monitor and help with vocabulary as necessary. Take feedback as a class and ask different groups to summarise their ideas and suggestions regarding each invention. If you wish, give students information from the Culture notes below.



CULTURE NOTES

Meat has been grown in a laboratory, and in March 2013 the first lab-grown burger was eaten in London. It was produced in the Netherlands and the cost of the project was €250,000. The critic who ate the burger said that it tasted similar to meat but was drier and not as tasty as real meat. At the moment, it is far too expensive to grow a lot of meat in this way, but this proves that it is possible and it may be produced more cheaply in the future.

2 READING

- a** Ask students to tell you what they think was the most important invention of the last 2,000 years. Put their suggestions on the board. Then tell them they are going to read some web posts where people answer the same question. Ask the class to read the posts quickly in order to find the names of the inventions and write them in the list. Check their answers as a class.

Answers

- | | |
|----------------|------------------------------|
| 1 the Internet | 3 Hindu-Arabic number system |
| 2 paper | 4 reading glasses |

- b** Students read the posts again to match the inventions and the results. Check answers as a class.

Answers

- a 4 b 3 c 1 d 2



VOCABULARY SUPPORT

active (B1) – busy, moving around

essential (B1) – very important

- c** Individually, students read the web posts again and note down their answers to the questions. Encourage them to compare their ideas with a partner before checking answers as a class.

Answers

- earliest: paper, latest: the Internet
- We might/will do everything from home.
- People were able to write down information, keep it and send it over long distances.
- There might be no science, engineering or computers.
- He can do lots of things (that he couldn't do without them).



EXTRA ACTIVITY

Have a brief open discussion about which of the inventions the class think is most important and why. Make a note of any errors students make when giving their opinions so that they can self-correct after the class has studied the language for giving opinions in the next section.

3 WRITING SKILLS

Giving opinions; Expressing results and reasons

- a** Students underline the phrase *I think* in the sentence. Ask the class if they know any other phrases for giving opinions and write any suggestions on the board. Say that there are four more phrases for giving opinions in the texts and give students a minute or two to find and underline them. Then check answers as a class.

Answers

I think

it seems to me that (2), I believe (3), In my opinion, In my view (4)

- b** Read through and correct the sentences as a class.

Answers

- 1 In my view 2 In my opinion 3 I believe 4 It seems to me

- c** Write *cause* and *result* on the board. Underneath write a sentence such as *Pablo speaks better English than he did last year*. Elicit possible causes for this from students (e.g. he did an English course last summer, he's got an English girlfriend) and then possible results (e.g. he gets better marks for his homework, he feels more confident, etc.). When you are sure students understand cause and result, ask them to look at the sentences and elicit the cause and result for each one. Check answers as a class.

Answers

- cause/reason: invention of numbers; result: science could develop
- cause/reason: invention of paper; result: send messages long-distance
- cause/reason: do everything online at home; result: stop using shops and offices
- cause/reason: invention of reading glasses; result: stay active when older

- d** Individually, students match the phrases and the different possible structures. Check answers as a class.

Answers

noun / noun phrase / pronoun + comma: because of, as a result of
join two clauses: as, because



EXTRA ACTIVITY

Give students some extra practice by writing this sentence on the board:

The computer was broken, so we couldn't finish our work.

Ask students in pairs to rewrite the sentence in as many ways as they can using *as* / *because* / *as a result of* / *because of*.

Suggested answers: *As/Because the computer was broken, we couldn't finish our work. We couldn't finish our work as/because the computer was broken. The computer was broken. As a result of this, we couldn't finish our work. Because of the broken computer, we couldn't finish our work.*

- e** Students complete the sentences individually. Check answers as a class.

Answers

- Because; As
- Because of; As a result of
- Because of; As a result of


- f** Say: *Let's revise: tell me some possible phrases for giving your opinion*. Elicit three or four from the class (they should be able to produce the phrases from 3b). *Tell me some phrases for connecting causes and results*. Elicit the phrases from 3c from the class. Then give students a minute or two to write the sentences about the telephone using this language. Check answers as a class.

Suggested answers

In my opinion, the telephone is the most important invention of the 19th century. Because we can talk to people in other places, we can communicate more quickly.

- g** Students write an additional sentence. Ask for examples in feedback.

4 WRITING

- a**  Tell students that they are going to write a web post like the ones in the reading text. This time, they have to choose one of the inventions in the list or think of another important invention. Ask students to note down the ideas they're going to write about, using the questions to help them. Then give them some time to do research by asking other students in the class for their responses to the questions. They can either simply talk to the students on either side of them or you can encourage them to walk round the class and ask more people. Monitor and help students with ideas if they need them.



LOA TIP MONITORING

When monitoring, be aware of differences of ability and personality. Ensure that shyer students have a chance to contribute by encouraging them to speak. Prevent the more confident students from dominating with a gesture or by saying 'one moment'.

- b** Students write their posts. Remind them to use words and phrases to explain reasons and results. Monitor and help with vocabulary as necessary.


- c** Students swap their posts with another student and reply to it. They should give comments including whether they agree or disagree, and why. Monitor and point out errors for students to self-correct.
- d** Students return their posts and replies. They should read the replies and check them according to the points given. Ask some students to read their posts and replies to the class.



FAST FINISHERS

Fast finishers can return to 3f and write a post about the invention of the telephone. Remember to look at these posts, too, during feedback.

ADDITIONAL MATERIAL

 Workbook 11D

UNIT 11

Review and extension

1 GRAMMAR

- a Students do the task individually. Point out that there may be more than one possible answer. Check answers as a class.

Answers

- 1 He was the man who/that invented the colour TV.
- 2 These are the mobile phones that/which work under water.
- 3 That is the machine that/which makes the screens for the computers.
- 4 This is the place where they found the statue.
- 5 These are the people who/that discovered the ancient city.
- 6 This is the shop where they sell that delicious bread.

- b Students complete the conversation with the correct articles. Check answers together.

Answers

- 1 a 2 the 3 a 4 the 5 a 6 the 7 a 8 a 9 a
- 10 The 11 the 12 an

- c  Students practise the conversation in 1b. If necessary, model it first with a student for the class to repeat.



EXTRA ACTIVITY

Write some sentences from the web posts in 11D on the board but leave a space where the articles should or shouldn't be. Ask students to tell you which (if any) articles should fill the gaps, e.g. *I believe ... (the) ... most important invention is ... (the) ... Hindu-Arabic number system, which was invented around ... (the) ... sixth century in ... (no article) ... India.*

Students then work in pairs. Each looks back at a different unit in the book so far and writes down two or three sentences from a text but takes out the articles. Their partner has to fill the gaps. To make this more fun, they can read out the sentences but make a 'beep' sound instead of the gap. Ask for examples in feedback.

2 VOCABULARY

- a Remind students that a compound noun combines two words and elicit examples that they remember from the unit. Then they make compound nouns for the definitions. Check answers as a class. Say each compound noun in turn and ask individual students to make a sentence with it.

Answers

- 1 cash machine 2 rock star 3 ticket office 4 road signs
- 5 street lights (or one word) 6 shopping bag 7 kitchen knife
- 8 bottle top

- b Students choose the correct alternatives to complete the sentences. Check answers together.

Answers

- 1 accidentally 2 as expected 3 by chance 4 luckily
- 5 on purpose 6 Surprisingly

3 WORDPOWER: preposition + noun

- a Write these sentences on the board: *My printer's not working properly. It can't print anything in colour at the moment.* Underline *in colour* and tell students that this is an example of a phrase with preposition + noun. Explain that we can't guess the preposition in phrases like this. We need to learn them as complete phrases. Ask students to work in pairs to match the phrases in bold in the sentences with their meanings. Check answers together.




FAST FINISHERS

Fast finishers can think of more sentences using the different phrases.

Answers

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

- b  In pairs, students discuss which sentences are true for them or which they agree with.
- c Read the explanation and the example with the class. Then ask them to match the sentences with the pictures. Check answers.

Answers

- 1 b 2 c 3 d 4 a

- d Students underline the preposition + noun combinations in the sentences in 3c. Ask them to write a sentence about somebody they know (of) who is in each place. Check answers and ask students to give you some example sentences.

Answers

- 1 in hospital 2 at university
- 3 in school 4 in prison



LANGUAGE NOTES

In school is used in the USA; *at school* is more common in the UK.

 Photocopiable activities: Wordpower p.262



LOA REVIEW YOUR PROGRESS

Students look back through the unit, think about what they've studied and decide how well they did. Students work on weak areas by using the appropriate sections of the Workbook, the Photocopiable activities and the Personalised online practice.