

2

Science and technology

Necessity is the mother of invention.

A proverb

BBC



URBAN LEGENDS

Watch the BBC video.
For the worksheet, go to page 118.

2.1

VOCABULARY

- Online • phones and computers
- word building • collocations

I can use language related to science, technology and inventions.

SHOW WHAT YOU KNOW

- Choose the correct verb. Then complete the sentences to make them true for you.
 - The first thing I do when I visit / **go** online is ...
 - The person I'd like to watch / follow on Twitter is ...
 - The website I visit / go in most is ...
 - The last music I downloaded / followed was ...
 - The last comment I posted / sent on social media was ...
 - The last time I updated / revised my social media profile was ...
- SPEAKING** Compare your sentences with a partner. How much time do you typically spend online each day?

SCIENCE AND TECHNOLOGY

QUIZ

- Match the years with these digital inventions.

1977 1984 1990 1993 1994

- The first **web browser** _____
- The first **search engine** _____
- The first **laser printer** _____
- The first **desktop computer** with **keyboard** and mouse _____
- The first smartphone _____

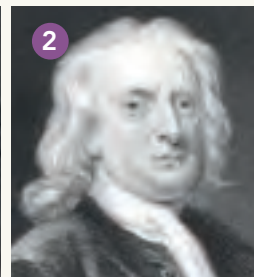
BONUS QUESTION: Which company made the first computer with a mouse?

- Which sciences were these great scientists mostly involved in?

astronomy, biology, chemistry, computer science, mathematics, physics



Nicolaus Copernicus





Isaac Newton




Charles Darwin

BONUS QUESTION: Which scientist won two Nobel Prizes?

- 3  1.24 Do the Science and Technology Quiz. Then listen and check your answers.
- 4  1.25 Complete sentences 1–5 with the correct scientist in the quiz. Then listen to Part 2 again and check your answers.


- 1 _____ did experiments with radioactive materials and discovered polonium and radium.
- 2 _____ did research into gravity, light and many areas of physics, maths and astronomy.
- 3 _____ invented the idea of a 'Universal Machine' or a computer in 1936.
- 4 _____ developed the theory that the Earth moves around the Sun.
- 5 _____ observed nature. He took notes and measurements and collected specimens from around the world.

WORD STORE 2A Phones and computers


- 5  1.26 Complete WORD STORE 2A with the compound nouns in red in the quiz. Then listen, check and repeat.
- 6 Complete the questions with compound nouns in WORD STORE 2A.
- 1 How many _____ messages do you usually send in a day?
 - 2 Do you always use the same _____ name and password online?
 - 3 Have you got a _____ computer or a laptop?
 - 4 Which is the most popular search _____ in your country?
 - 5 Which _____ browser do you normally use?
 - 6 Have you got a reliable _____ connection with fast download speeds?
 - 7 Do you like typing on a smartphone or do you prefer to use a key _____ ?

- 7 **SPEAKING** Ask and answer the questions in Exercise 6.

WORD STORE 2B Word building

- 8  1.27 Complete WORD STORE 2B with the science subjects in the quiz. Then listen, check and repeat.
- 9 **SPEAKING** Discuss the questions.
- 1 Would you like to be a scientist? Why?/Why not?
 - 2 Which science subject do you find easiest/most difficult to understand?
 - 3 Which science subject do you think will be most useful to you in the future? Why?

WORD STORE 2C Collocations

- 10  1.28 Complete WORD STORE 2C with the infinitive form of the underlined verbs in Exercise 4. Then listen, check and repeat.
- 11 Complete the sentences with the correct verb in Word Store 2C in an appropriate form.
- 1 Tim has _____ a new program. It will change how people manage databases.
 - 2 Rowena _____ the sky at night. She hopes to _____ a new planet.
 - 3 Lucie _____ wild plants to develop new drugs.
 - 4 Fred is _____ research into laser technology for his doctorate.
 - 5 Lena _____ experiments on plastics to measure how strong they are.
 - 6 George looks at big numbers and _____ notes. He produces formulas to solve problems.
- 12 **SPEAKING** What kind of scientist is each person in Exercise 11? Discuss which science you think is the most/least important to society.

1 *Tim = a computer scientist*

3 Are statements 1–3 true (T) or false (F)?

- 1 Albert Einstein failed Mathematics at school. **T / F**
- 2 An earthquake can shorten the length of a day. **T / F**
- 3 Some people are left-brained, others are right-brained. **T / F**



BONUS QUESTION: What percentage of our brain do we normally use?



Marie Skłodowska-Curie



Alan Turing

2.2

GRAMMAR

Past Continuous and Past Simple

I can use the Past Simple and Past Continuous to describe past events.

1 SPEAKING Read what people say about e-books and printed books. Which comments do you agree with? Think of more advantages and disadvantages. Discuss with a partner.

- ① When I go on holiday, I don't have to pack heavy books.
- ② I like the feel of a real book in my hands.
- ③ I work with computer screens all day – I don't want to read books on a screen too.
- ④ Books are so expensive. E-books are cheaper.

2 Read about E ink. Who was Joe Jacobson and why did he have a 'Eureka' moment?



In 1997 Joe Jacobson **was working** as a researcher for the Massachusetts Institute of Technology (MIT). One summer, he went on holiday to the coast. He **was lying** on a beach when he **finished** his book. Unfortunately, he didn't have another one with him. At that moment, he imagined

an electronic book that he could download any time he wanted and read in direct sunlight. It was a 'Eureka' moment. His vision became E ink technology and helped develop the e-readers that we have today.

3 Read the GRAMMAR FOCUS. Complete the examples using the past forms in blue in Exercise 2.

GRAMMAR FOCUS

Past Continuous and Past Simple

- You use the **Past Continuous** to talk about longer actions in progress at a time in the past.
In 1997 Joe Jacobson ¹ _____ as a researcher for MIT.
- You often use the **Past Continuous** with the **Past Simple** – usually when a short action (Past Simple) interrupted a longer action (Past Continuous).
He ² _____ on a beach when he ³ _____ his book.

Past Continuous: was/were + -ing form

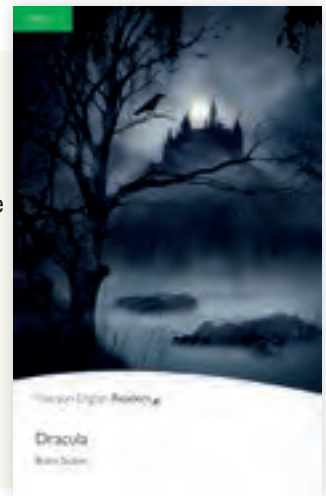
- | | |
|---|--------------------------------|
| + | I was working etc. |
| - | She wasn't working etc. |
| ? | Were you working? etc. |

4 Complete the beginnings of two stories with the Past Simple or the Past Continuous form of the verbs in brackets.



It was a terrible stormy night six months after my father's death. My mother ¹ **was sitting** (sit) alone by the fire, waiting for her baby to arrive. She ² _____ (feel) sad and ill. Suddenly she ³ _____ (hear) a noise outside. 'There's someone at the door, Peggotty,' my mother ⁴ _____ (call). 'Who is it?' Peggotty was her servant and her only real friend. 'I'll go and see,' Peggotty ⁵ _____ (reply). She ⁶ _____ (go) and ⁷ _____ (open) the door.

As the carriage moved quickly along the rough dry road, Jonathan Harker ⁸ _____ (look out) at the changing view. Behind him was a land of small, green hills and colourful fields of fruit trees. Now he ⁹ _____ (drive) into the Transylvanian mountains through a thick forest. It ¹⁰ _____ (get) dark, and the other people in the carriage ¹¹ _____ (be) quiet and afraid. A woman opposite him ¹² _____ (reach) towards him and ¹³ _____ (put) something in his hand. It ¹⁴ _____ (be) a small, silver cross. 'Wear it around your neck,' she said. 'You'll be safe.'



5 SPEAKING Which story would you like to continue reading and why? Tell your partner.

6 Complete each sentence with one Past Simple and one Past Continuous verb form. Which sentences are true for you?

- 1 My parents **were studying** (study) when they **met** (meet).
- 2 My computer _____ (crash) when I _____ (do) my homework last night.
- 3 I _____ (watch) a film when my mum _____ (get) home yesterday.
- 4 It _____ (rain) when I _____ (wake up) this morning.
- 5 I _____ (burn) myself when I _____ (make) breakfast.
- 6 A friend _____ (text) me when I _____ (walk) to school.

7 Write questions for the sentences in Exercise 6. Change pronouns where necessary. Then ask your partner as in the example.

- A: **Were your parents studying when they met?**
B: **No, they weren't.**

FOCUS VLOG About technology

8 Watch the Focus Vlog. For the worksheet, go to page 119.

Grammar page 135

2.3

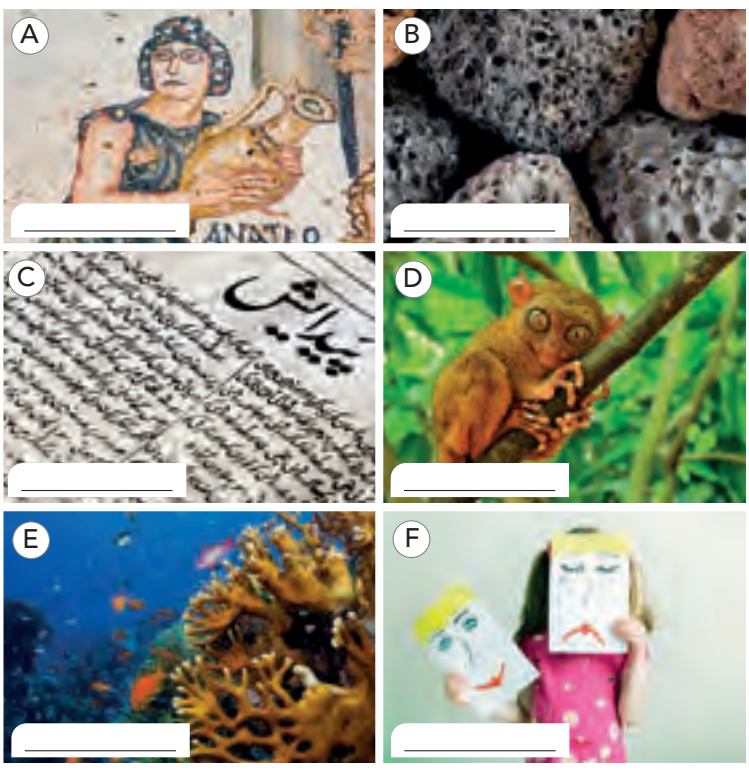
LISTENING

Matching

I can identify key details in a simple recorded narrative about scientists.

1 **1.29** Label the photos with the words in the box. Then listen, check and repeat.

- linguistics
- geology
- marine biology
- archaeology
- psychology
- conservation



EXAM FOCUS Matching

2 **1.30** Listen to two conversations and choose the correct answer.

- 1 What does the girl want to study in the future?
photo A photo B photo D
- 2 The girl and the boy have both seen one of the documentaries. What was it about?
photo B photo E photo F

3 **1.31 SPEAKING** Complete the job descriptions with the jobs in the box. Then listen, check and repeat. Do you know anybody who does one of these jobs? Tell your partner.

- A linguist
- A geologist
- A marine biologist
- A psychologist
- An archaeologist
- A conservationist

- 1 _____ studies and often speaks a lot of languages.
- 2 _____ studies ways of protecting the environment.
- 3 _____ studies rocks and the history of the Earth.
- 4 _____ studies how people behave and how their minds work.
- 5 _____ studies people who lived thousands of years ago.
- 6 _____ studies, observes and protects oceans.

4 **1.32** Listen to five speakers talking about why they became scientists. Which job in Exercise 3 does each person do?

5 **1.32** Listen again. Match speakers 1–5 with statements A–F. There is one extra statement.

- Speaker 1: Speaker 3: Speaker 5:
Speaker 2: Speaker 4:

- A I want to understand how early childhood affects behaviour.
- B I'm keen on studying how machines can communicate.
- C I want to explore oceans and preserve the ocean environment.
- D I'm interested in studying our prehistoric ancestors.
- E I want to study the evolution of our planet.
- F I want to find solutions to nature's problems.

PRONUNCIATION FOCUS

6 **1.33** Complete the table. Then listen, check and repeat. Mark the stress.

Subject	Job
1 archaeology	archaeologist
2 _____	analyst
3 conservation	_____
4 geology	_____
5 _____	linguist
6 _____	psychologist

7 **SPEAKING** Practise the words in Exercise 6 as in the example. Pay attention to the stress.

A: What does an archaeologist do? B: Archaeology.

WORD STORE 2D Collocations

8 **1.34** Complete WORD STORE 2D with the words in the box. Then listen, check and repeat.

9 Complete the statements about the speakers with the words and phrases in WORD STORE 2D.

- 1 The marine biologist wants to collect _____ about global warming.
- 2 The linguist has published _____ on robot communication.
- 3 The psychologist loves doing research and analysing _____.
- 4 The archaeologist spent _____ in the Egyptian room in the Louvre.
- 5 The conservationist is doing research into climate change to help protect _____.

10 **SPEAKING** How common is it to study the same subjects as your parents? Think about your friends and family. What will you do? Discuss with a partner.

2.4

READING

Multiple choice

I can scan an interview to locate specific information.

1 **SPEAKING** Look at the photos of Antarctica. Discuss the questions.

- 1 What do you think it's like working there?
- 2 What kind of jobs do you think people do?

2 Look at comments from people interested in working in Antarctica. Which of them are suitable in your opinion?

- 1 'I don't mind working long hours.'
- 2 'I don't like the dark.'
- 3 'I need my own space.'
- 4 'I'm very fit and healthy.'
- 5 'I expect to earn lots of money.'
- 6 'I want to save the planet.'

3 **1.35** Listen to a talk about working in Antarctica. Check your ideas in Exercises 1 and 2.

4 **SPEAKING** Discuss whether you would like to work in Antarctica. Explain why or why not.

5 Read an interview with a research scientist and answer the questions.

- 1 What is the population of Antarctica?
- 2 What did Jane Roberts do in her free time in Antarctica?
- 3 What did she miss most when she was there?

EXAM FOCUS Multiple choice

6 Read the text again. For questions 1–5, choose the correct answer, A, B, C or D.

- 1 The South Pole Station is named after
 - A the first person to reach the South Pole.
 - B the first person who died after reaching the South Pole.
 - C the five people who died after reaching the South Pole.
 - D the first two explorers to reach the South Pole.
- 2 People who work in Antarctica
 - A are residents of Antarctica.
 - B live in small towns.
 - C stay for a period of time in research stations.
 - D return to their country in winter.
- 3 Jane discovered that
 - A she likes working in a laboratory.
 - B millions of years ago dinosaurs lived on ice.
 - C the Antarctic wasn't always cold.
 - D research is like doing a jigsaw.
- 4 The temperature at the South Pole
 - A is -80 degrees all year round.
 - B is usually above zero in summer.
 - C never rises above zero.
 - D is too cold to go outside.
- 5 In the interview, Jane
 - A describes her experience of working in Antarctica.
 - B encourages tourists to visit Antarctica.
 - C explains how researchers apply for jobs in Antarctica.
 - D presents her research into the weather in Antarctica.

7 **1.37** Match the words in blue in the text with the definitions in the box. Then listen, check and repeat.

- 1 several sheets of material on top of one another = layers
- 2 the skeleton = _____
- 3 a place where planes can land = _____
- 4 organise and manage = _____
- 5 a place to eat, usually in a school or factory = _____
- 6 a picture cut into small pieces that you put together = _____
- 7 arrived (at a place) = _____

8 **SPEAKING** Complete the questions with the correct form of the words in Exercise 7. Then ask and answer the questions.

- 1 How long does it take you to _____ home after school?
- 2 Do you usually have lunch in the school _____?
- 3 Have you ever completed a 1,000-piece _____?
- 4 Would you like to _____ your own business one day?
- 5 How many _____ of clothing do you wear when you go outside in winter?
- 6 Do any museums in your city have dinosaur _____?

9 **1.38** Listen to the words and phrases in the box and repeat them. Then complete the text.

above/below zero average temperature
(0°) degrees centigrade (Celsius) plus/minus 10°C
The temperature rises/falls to (+40°/-80°) degrees.

Antarctic weather

The interior of Antarctica is the coldest place on Earth. The hottest month at the South Pole is January with an average temperature of minus 25 ¹ _____ centigrade. This is the summer in Antarctica. In fact, the temperature in Antarctica has never risen ² _____ zero. The warmest temperature ever recorded at the South Pole (on December 25, 2011) was ³ _____ 12.3 degrees ⁴ _____. In winter, temperatures ⁵ _____ to 80 degrees centigrade ⁶ _____ zero. The coldest month is September.

10 **SPEAKING** Tell your partner about the last time you experienced an extreme temperature, hot or cold. Use the questions to prepare.

- 1 When did you experience an extreme temperature?
- 2 Where were you and what were you doing at the time?
- 3 What was the temperature? How long did it last?
- 4 How did you manage and what did you do?
- 5 Do you like extreme temperatures? Why?/Why not?

WORD STORE 2E The temperature

11 **1.39** Complete WORD STORE 2E by arranging the adjectives in order from coldest to hottest. Then listen, check and repeat.

Science at the South Pole



1.36

Jane Roberts is a marine biologist. She worked for two years in Antarctica. Here, she answers your questions.

Is there really a pole at the South Pole?

Yes, there is. It's in front of the Amundsen-Scott South Pole Station. In 1911 a Norwegian explorer called Roald Amundsen was the first person to get there, followed by a British man, Robert Falcon Scott, thirty-four days later. Unfortunately, Scott and his team of five all died on the return journey. When the first explorers **reached** the South Pole there was nothing there. Now, several hundred people work at the Station. There's an **airstrip** for small planes, a **canteen**, hot showers, a post office, a tourist shop, a basketball court and a movie theatre.

Who does Antarctica belong to?

Antarctica doesn't belong to any nation. There's no permanent population, but there are bases that look like small towns. Thirty different countries **run** about seventy research stations in Antarctica. People stay there between three and eighteen months. Most people work only in the summer months, but some stay all year round. The population is around 4,000 in summer and 1,000 in winter.

Why did you want to work in Antarctica?

I was studying in London and I read about an exciting research project in Antarctica. I applied for the job, but thousands of other people also applied. I was lucky!

What exactly were you doing there?

I was doing research into marine life. I collected specimens of ice and examined them in the laboratory. There are **layers** of ice thousands of years old! We found the **remains** of a dinosaur. It was in millions of pieces and we had to put all the pieces together like a **jigsaw**. Our research showed us that millions of years ago the Antarctic was much warmer.

What did you wear in Antarctica?

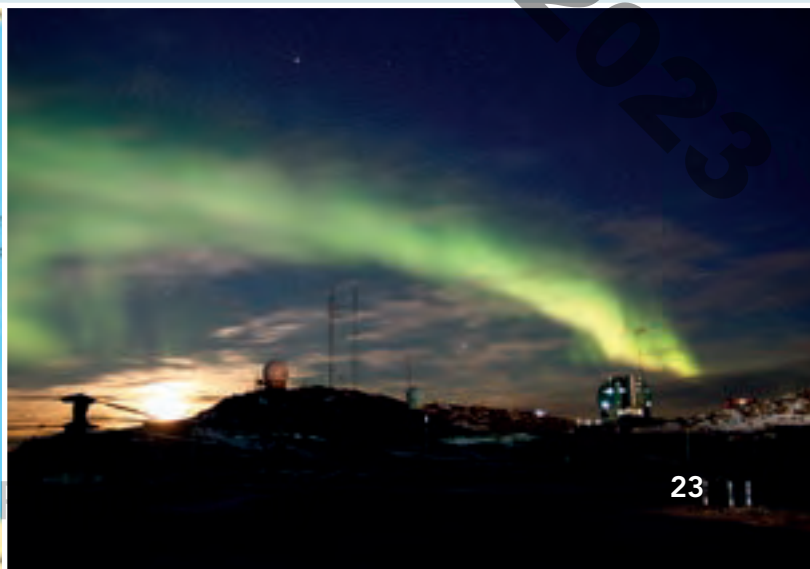
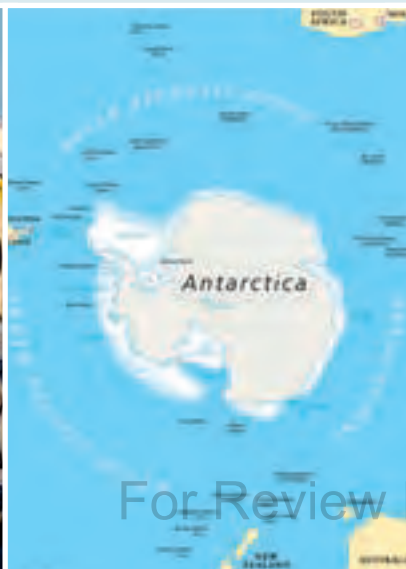
It's extremely cold all year round. When I was doing experiments outside, I wore three pairs of socks and often five layers of clothing. Winter temperatures fall to -80°C and even summer temperatures are below zero at the South Pole. For several months, there's no sunlight at all. Sometimes it's too cold to go outside.

What did you do in your free time?

When it was snowing, we read lots of books and played games. There isn't much to do in Antarctica, but I enjoy reading and I made some good friends there too.

Did you miss home?

No, but I missed colours – it's very white in Antarctica! But I was working all day and it was really interesting work.



For Review

GRAMMAR

2.5

used to

I can use *used to* to refer to past habits and routines.



1 **SPEAKING** Look at the photos. In what way are these things different today? Discuss with a partner.

(fashion friends music relationships school technology travel)

2 **1.40** Listen to a dialogue between Chris and his granddad. Are the sentences about Chris's granddad true (T) or false (F)?

- 1 He **used to phone** people from the phone in the sitting room.
- 2 He used to message people.
- 3 He didn't use to live near his friends.
- 4 His mum didn't use to like the loud music in his bedroom.
- 5 His parents **bought** him a camera for his sixteenth birthday.
- 6 He **used to have** five or six good friends.

3 Read the **GRAMMAR FOCUS**. Complete the examples using the past forms in blue in Exercise 2.

GRAMMAR FOCUS

used to

- You use **used to + verb** to talk about past states that are no longer true.
He ¹ _____ **have** five or six good friends.
- You use **used to + verb** to talk about regular past actions that don't happen anymore.
He ² _____ **phone** people from the phone in the sitting room.
- You don't use **used to + verb** to talk about a past action that only happened once. You use the **Past Simple**.
His parents ³ _____ him a camera for his sixteenth birthday. (NOT *used to buy*)

used to + verb

+	I used to work ...
-	He didn't use to work ...
?	Did they use to work ...? Yes, they did ./No they didn't .

4 Complete the sentences with the correct form of the verbs in brackets. Use *used to + verb* or the Present Simple.

- 1 People **used to read** (read) maps but now they **use** (use) GPS.
- 2 People _____ (not/use) their cars much but now they _____ (drive) everywhere.
- 3 People _____ (update) their online profiles now, but they _____ (write) letters.
- 4 Children _____ (play) inside now but in the past they _____ (play) outside.
- 5 Teachers _____ (suggest) books but now they _____ (give out) website addresses.
- 6 Families _____ (watch) the TV together but now they _____ (watch) it individually.
- 7 Students _____ (use) Google now, but they _____ (look up) things in encyclopedias.
- 8 Parents _____ (not/worry) so much but now they _____ (give) children less freedom.

5 **SPEAKING** Discuss the statements in Exercise 4. Do you think they are all true?

6 Replace the Past Simple with *used to + verb* if possible. Which sentences are true for you?

- When I was at primary school, ...
- 1 my parents took me to school every day.
 - 2 I didn't go online much.
 - 3 I went on a school trip to the Science Museum.
 - 4 I didn't like school dinners.
 - 5 my parents bought me my first mobile phone.
 - 6 I wanted to be an astronaut.

7 Make questions for the sentences in Exercise 6. Then ask and answer as in the example.

- A: *Did your parents use to take you to school?*
B: *Yes, they did.*

2.6

USE OF ENGLISH

Linkers and time expressions

I can use a range of common linking words and time expressions.

- 1 1.41 **SPEAKING** Look at the photo. Discuss what you think the film is about. Use the ideas in the box. Then listen and check.

civil rights for black women computers
mathematicians American space projects robots

- 2 1.41 Listen again and choose the correct option.

- The three women worked for NASA as *mathematicians / astronauts* **during** the 1950s and 60s.
- While** they were working for NASA, they earned more / less than their white colleagues.
- Segregation between blacks and whites continued **until** the *mid- / late* 1960s.
- When** the film came out, Katherine Johnson – 78 / 98 years old at the time – met the actress who played her.
- As soon as** Johnson arrived at the 2016 / 2017 Oscars ceremony, everyone stood up and cheered.

- 3 Read the LANGUAGE FOCUS. Complete the information with the words in blue in Exercise 2.

LANGUAGE FOCUS

Linkers and time expressions

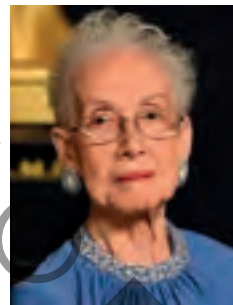
- You use conjunctions **when/while** to link things that happen at the same time. [conjunction + subject + verb]
¹**While** they were working for NASA, they earned less than their white colleagues
- You use conjunctions **after**/² _____ /**before/when** to link things that happen in an order. [conjunction + subject + verb]
³ _____ the film came out, Johnson met the actress who played her.
- You use prepositions **during/for/until (till)/by** as follows:
during + noun phrase to say **when** something happens –
⁴ _____ the 1950s and 60s
until (till) + noun phrase to talk about a state that continues up to a point in time –
Segregation continued ⁵ _____ the mid-1960s.
by + noun phrase to talk about an action that happens at or before a point in time –
Segregation stopped by the late 1960s.

- 4 Choose the correct option. Then change the information to make the sentences true for you.

- I haven't been to the cinema **for** / *during* several weeks.
- I saw *Hidden Figures* *during* / *while* I was on holiday.
- I learnt a lot about American Civil Rights *during* / *while* the film.
- I didn't know that segregation in the USA continued *until* / *by* 1964.
- I ate some popcorn *when* / *after* I was watching the film.
- As soon as* / *While* the film finished, I went home.



- 5 1.42 **USE OF ENGLISH** Read the text. Choose the correct answer, A, B or C. Then listen and check.



KATHERINE JOHNSON

¹**When** Katherine Johnson was a child, she was a maths genius. ² _____ she was only 14, she went to university to study Maths. ³ _____ she was studying at university, her Maths professor told her she should become a research mathematician. ⁴ _____ she graduated from university she became a teacher. ⁵ _____ the 1940s she got married and had children.

She didn't become a research mathematician ⁶ _____ she was 35. She got a job as a 'computer' with NASA. Katherine was different from other 'computers' – ⁷ _____ she was at NASA, she asked a lot of questions. ⁸ _____ Katherine Johnson started work at NASA, only men went to important meetings. She changed that!

- | | | |
|-----------------|----------|--------------|
| 1 A When | B Before | C During |
| 2 A While | B When | C Until |
| 3 A During | B While | C After |
| 4 A Before | B While | C As soon as |
| 5 A Till | B During | C While |
| 6 A until | B by | C during |
| 7 A during | B while | C after |
| 8 A Before | B During | C As soon as |

- 6 Complete the sentences. Write five true sentences and one false.

- While I was going home yesterday, I ...
- As soon as I got home, I ...
- During the evening I ...
- I didn't go to bed until ...
- I was fast asleep by ...

- 7 **SPEAKING** Read your sentences in Exercise 6 to your partner for him/her to guess which sentence is false.

A story

I can write a story with a simple linear sequence.

1 SPEAKING Tell your partner about a surprising or interesting thing that happened to you on holiday.

Say:

- 1 where and when it happened.
- 2 how old you were.
- 3 what you were doing when it happened.

2 Read Paul's story and choose the best title, A, B or C.

- A The Holiday of a Lifetime
 B Surprise by the Sea
 C Beautiful Cornwall

I was twelve years old and my parents and I were on holiday in Cornwall. They are both biologists and we all love nature. One morning, Dad suggested walking along the beach to a distant village.

It was a lovely day for a walk, but after an hour, I noticed some dark clouds. I asked my parents if they thought we should go back. They smiled at each other, and then Mum said we were nearly there.

What was going on? Mum usually made me go indoors during storms. What's more, we were still far away from the village. **Anyway**, suddenly, there was loud thunder and it started to rain. "Come on, quick!" my father said. "We're almost there."

I noticed a cottage not far away. Dad started running towards it **so** we ran after him. When we got there, he seemed really excited, which **I must admit** was a bit strange. **Unfortunately**, there was no one home. 'That's unlucky,' said Dad 'but wait...' **Suddenly**, he took a key from his pocket, unlocked the door and pushed it open. He was silent for a moment. Then with a smile he said: "Come in. And welcome home!" **What a surprise!**

In fact, thinking back to my parents' behaviour **during** the first part of our holiday, I knew something strange was going on – but I had no idea what! Our new holiday home was the perfect place for nature lovers. **It was awesome!**

We still live in London, but our cottage in Cornwall is our dream house, and **I will never forget the day I first saw it.**

3 Read the story again and put events in the correct order.

- a Nobody answered the door.
- b The weather changed.
- c The family went into their new holiday home.
- d The family went to Cornwall on holiday.
- e Paul saw a cottage in the distance.
- f The family went for a walk along the coast.

4 Read the WRITING FOCUS. Complete the examples with the words in purple in the story.

WRITING FOCUS

A story

- Set the scene:

I ¹was twelve years old when ...

It was late in the evening when ...

It ²_____ a walk.

I was in the classroom when ...

- Use questions, short dramatic sentences and occasional exclamation marks to show surprise or excitement:

What was ³_____ on?

What a ⁴_____!

What a nightmare!

It was ⁵_____!

We were in trouble.

- Use adverbs to add interest:

All of a sudden, / ⁶_____, / ⁷_____, / Luckily, ... really (good)

... incredibly (beautiful)

... completely (lost)

- Use a summarising statement to begin or end your story:

I'll never forget ⁸_____ I first saw ... /

the time I decided to ... / when I first went ... /

... was an event I'll never forget.



8 Read the story and choose the correct option.

'This is a bad start', I thought and looked again at the directions on my phone. I was trying to find the city hospital for my first day of work experience in the IT department there. Unfortunately, I was very late and totally lost.

¹*I have to say/Anyhow* it was my fault. I forgot to check the route the day before. ²*During/Anyway*, my phone said to turn right, but ³*in fact/I have to say* there was no right turn, just a wall! What was I going to do? I was already ten minutes late. 'Go back to the main road and try again,' I thought 'and go quickly!' I hurried along as fast as I could. I was turning a corner ⁴*then/when* suddenly there was a bang ⁵*and/so* everything went black.

⁶*When/I must admit* I opened my eyes, there were four worried faces looking down at me. 'Are you alright?' 'Yes, I think so', I said. My head hurt. ⁷*Then/While* I remembered the bang and the darkness. 'What happened?'

'Well, you were hurrying along looking at your phone, and you bumped into that tree. We thought you should go to hospital so we've called an ambulance.'

Luckily, the doctor said I was fine. ⁸*Anyway/I must admit* that was not how I expected to arrive at the hospital for my first day of work experience!

5 Read the extracts from different stories. Find and correct three mistakes in each.

1 I was 14 years old then I first became interested in archaeology. I was looking for fossils one Sunday afternoon when I made the discovery that made me famous. I am never forget the feeling of seeing it there in the ground for the first time. It was awesome?

2 We were in the Chemistry lab at school when we noticed the strange smell. All of a suddenly, there was a loud bang. What is going on? Our teacher walked in from a lab next to ours. Her hair was a mess and her glasses were black with smoke. Lucky, she was more shocked than hurt. 'What happened, Miss?' asked one of my classmates.

3 The school trip to the science museum is a day I'll never remember. We had a great time at the museum. When we were going back to meet the others at the bus to go home, my friend and I got stuck in a lift. The lights went off and the alarm didn't work. We were on trouble. What we were going to do?

6 **SPEAKING** Choose one of the extracts in Exercise 5 and say what you think happened next.

7 Complete the LANGUAGE FOCUS with the underlined linkers in the story.

LANGUAGE FOCUS

Informal linkers

In narrative stories we often use:

- *I have to say* or ¹*I must admit* to emphasise the next piece of information.
- *Anyhow* or ²_____ to change the subject or move the story on.
- *Actually* or ³_____ to show that the next piece of information is surprising.
- *And, but, because,* ⁴_____ to join parts of sentences.
- *Then, when, while,* ⁵_____ to make the order of events clear.

SHOW WHAT YOU'VE LEARNT

9 Do the writing task. Use the ideas in the **WRITING FOCUS** and the **LANGUAGE FOCUS** to help you.

Your teacher has asked you to write a story ending with: *I was so relieved. It was finally over!*

Use the questions below to help you.

- Where were you?
- When was it?
- Who was with you?
- What happened?
- What could you see and hear?
- How did you feel?
- What did you do next?
- How did it end?

Remember to:

- give your story a title.
- make your story interesting for the reader.
- give your story a strong ending.

It was a chilly autumn morning ...

2.8

SPEAKING

Telling a story

I can tell a story and show interest in someone's story.

1 **SPEAKING** Look at the photo of Tom. Then ask and answer the questions.

- 1 Where was Tom?
- 2 What was he doing?
- 3 What was the problem?

2 **1.43** Read and listen to the story. Compare your ideas in Exercise 1.



Lisa: Hi Tom. How was your holiday in Australia? 1
 Tom: It was really good, thanks ... except for the day I nearly died. }
 Lisa: What happened?
 Tom: I was doing some climbing. At first the sun was shining and I was enjoying myself. 2
 But all of a sudden the weather changed. 3
 It became really foggy and I couldn't see the path. }
 Lisa: Oh dear, that sounds frightening.
 Tom: I was pretty worried. I continued for a while, but finally I realised I was lost.
 Lisa: What did you do?
 Tom: Fortunately, I had my phone with me so I called my father – 9,000 miles away in England! He called the Australian police and told them where I was. Then they called me. Unfortunately, my battery went dead after five seconds. It was dark and cold. I sat under a rock, put on my torch and waited. 4
 Lisa: Oh no, what a nightmare!
 Tom: Eventually, they found me. I was so relieved. 5
 I used to go climbing on my own all the time, but I'll never do it again. }

3 There are often five stages in a story. Match stages 1–5 in Tom's story with headings a–e below.

- | | | | |
|-----------------|--------------------------|---------------|--------------------------|
| a background | <input type="checkbox"/> | d problem | <input type="checkbox"/> |
| b final comment | <input type="checkbox"/> | e main events | <input type="checkbox"/> |
| c introduction | <input type="checkbox"/> | | |

4 Read the **SPEAKING FOCUS**. Complete the examples with the underlined phrases in the story in Exercise 2.

SPEAKING FOCUS

Telling a story

Use the right tenses

- Past Continuous for the 'background':
The sun was shining and I was enjoying myself.
- Past Simple for the 'problem' and the 'main events':
The weather changed. I couldn't see the path.

Use linkers

- **Beginning:** To start with/At ² _____
- **Middle:** Suddenly/All of a ³ _____/Luckily/Fortunately/⁴ _____
- **End:** In the end/Finally/⁵ _____

Say how you felt

I was excited/frightened/surprised/shocked/worried, etc.

Make a 'final comment'

It was the best/worst day of my life!
 I'll never forget the look on his face!
 I'll never ⁶ _____ .

Listening to a story

Neutral response

Really?/Oh dear./Oh no.

Strong response

That sounds amazing/funny/⁷ _____ .
 What a great story/⁸a _____ !

Respond with questions

What happened? What did you do?

5 Follow the instructions to prepare your story.

- 1 Choose a topic from the box or one of your own ideas.

a dangerous situation a mistake
 some good or bad news some good or bad luck
 a nice surprise something that happened on holiday
 a problem with technology

- 2 Think about what you are going to say and make notes under the headings for the five stages of a story in Exercise 3.

6 **SPEAKING** Follow the instructions below to practise telling your stories. Then act out your dialogue to the class.

Student A: Use your notes in Exercise 5 to tell the story.

Student B: Use the **SPEAKING FOCUS** to respond to what Student A says.

ROLE-PLAY Telling a story

10 Watch the video and practise. Then role-play your dialogue.

2.1 Vocabulary  4.9

astronomer /ə'strɒnəmə/
 astronomy /ə'strɒnəmi/
 biologist /baɪ'ɒlədʒɪst/
 biology /baɪ'ɒlədʒi/
 broadband /'brɔːdbænd/
 camera /'kæməərə/
 chemist /'kemɪst/
 chemistry /'keməstri/
 collect specimens /kə'lekt 'spesəmənz/
 computer science /kəm'pjʊtə ,saɪəns/
 computer scientist /kəm'pjʊtə
 'saɪəntɪst/
 desktop computer /,desktp
 kəm'pjʊtə/
 develop a theory /dɪ'veləp ə 'θəri/
 digital /'dɪdʒɪtl/
 discover /dɪ'skʌvə/
 do an experiment /,duː ən
 ɪk'sperɪmənt/
 do research /,duː rɪ'sɜːtʃ/
 download music /,daʊn'ləʊd 'mjuːzɪk/
 gravity /'grævəti/
 invent /ɪn'vent/
 keyboard /'kiːbɔːd/
 laptop /'læptɒp/
 laser printer /'leɪzə ,prɪntə/
 mathematician /,mæθəmə'tɪʃən/
 mathematics /,mæθə'mætiks/
 mouse /maʊs/
 observe /əb'zɜːv/
 password /'pɑːswɜːd/
 physicist /'fɪzɪsɪst/
 physics /'fɪzɪks/
 planet /'plænət/
 science /'saɪəns/
 scientist /'saɪəntɪst/
 screen /skriːn/
 search engine /'sɜːtʃ ,endʒən/
 smartphone /'smɑːt'fəʊn/
 take measurements /,teɪk 'meɪzəmənts/
 take notes /,teɪk 'nəʊts/
 text message /'tekst ,mesɪdʒ/
 update your profile /ʌp,deɪt jɔː
 'prəʊfaɪl/
 username /'juːzəneɪm/
 visit a website /,vɪzət ə 'websaɪt/
 web browser /'web ,braʊzə/

2.2 Grammar  4.10

arrive /ə'raɪv/
 burn yourself /'bɜːn jə'self/
 carriage /'kærɪdʒ/
 coast /kəʊst/
 crash /kræʃ/
 direct sunlight /daɪ'rekt 'sʌnlajt/
 e-book /'iː bʊk/
 E ink /'iː ɪŋk/
 electronic /,elɪk'trɒnɪk/
 e-reader /'iː ,riːdə/
 get dark /,get 'dɑːk/
 get home /,get 'həʊm/
 hill /hɪl/
 imagine /ɪ'mædʒɪn/
 reach towards /,riːtʃ tə'wɔːdz/
 reply /rɪ'plaɪ/

researcher /rɪ'sɜːtʃə/
 rough /rʌf/
 servant /'sɜːvənt/
 silver cross /,sɪlvə 'krɒs/
 text sb /'tekst ,sʌmbɒdi/
 thick forest /,θɪk 'fɒrəst/
 vision /'vɪʒən/
 wake up /,weɪk 'ʌp/

2.3 Listening  4.11

affect /ə'fekt/
 analyse data/evidence /,ænləɪz 'deɪtə/
 'evədəns/
 analysis /ə'næləsəs/
 ancestor /'ænsəstə/
 archaeologist /,ɑːki'ɒlədʒɪst/
 archaeology /,ɑːki'ɒlədʒi/
 collect data/evidence /kə'lekt 'deɪtə /
 'evədəns/
 conservation /,kɒnsə'veɪʃən/
 conservationist /,kɒnsə'veɪʃənɪst/
 discovery /dɪ'skʌvəri/
 environment /ɪn'veɪrənmənt/
 evolution /,ɪ:və'lʊːʃən/
 exploration /,eksplə'reɪʃən/
 explore /ɪk'splɔː/
 find a solution /,faɪnd ə sə'ljuːʃən/
 geologist /dʒɪ'ɒlədʒɪst/
 geology /dʒɪ'ɒlədʒi/
 global warming /,gləʊbəl 'wɔːmɪŋ/
 linguist /'lɪŋgwɪst/
 linguistics /lɪŋ'gwɪstɪks/
 marine biologist /mə,rɪ:n baɪ'ɒlədʒɪst/
 marine biology /mə,rɪ:n baɪ'ɒlədʒi/
 observation /,əbzə'veɪʃən/
 protect the environment /prə'tekt ðɪ
 ɪn'veɪrənmənt/
 protection /prə'tekʃən/
 psychologist /saɪ'kɒlədʒɪst/
 psychology /saɪ'kɒlədʒi/
 publish a research paper/evidence
 /,pʌblɪʃ ə rɪ'sɜːtʃ ,peɪpə'evədəns/
 solution /sə'ljuːʃən/
 solve /sɒlv/
 spend hours /,spend 'aʊəz/
 technology /tek'nɒlədʒi/

2.4 Reading  4.12

above zero /ə,bʌv 'zɪərəʊ/
 airstrip /'eəstriːp/
 average temperature /,ævərɪdʒ
 'tempɪrətʃə/
 below zero /bɪ,ləʊ 'zɪərəʊ/
 boiling /'bɔɪlɪŋ/
 canteen /kæn'tiːn/
 chilly /'tʃɪli/
 cold /kəʊld/
 degree centigrade /dɪ'grɪː
 'sentəgreɪd/
 fall /fɔːl/
 freezing /'friːzɪŋ/
 hot /hɒt/
 jigsaw /'dʒɪɡzɔː/
 layer /'leɪə/
 own (adj) /əʊn/
 permanent /'pɜːmənənt/

plus/minus 25 degrees /'plʌs/'maɪnəs
 'twenti 'faɪv di 'grɪːz/
 reach home/the South Pole /,riːtʃ
 'həʊm/ðə saʊθ 'pəʊl/
 recorded /rɪ 'kɔːdɪd/
 remains /rɪ'meɪnz/
 return to /rɪ'tɜːn tə/
 rise /raɪz/
 run a business/research station /,rʌn ə
 'bɪznəs/rɪ'sɜːtʃ 'steɪʃən/
 save /seɪv/
 the dark /ðə dɑːk/
 warm /wɔːm/

2.5 Grammar  4.13

astronaut /'æstrɒnɔːt/
 give out /,gɪv 'aʊt/
 GPS /dʒiː piː 'es/
 mobile phone /,məʊbaɪl 'fəʊn/
 inside /ɪn'saɪd/
 outside /aʊt'saɪd/

2.6 Use of English  4.14

cheer /tʃɪə/
 civil rights /,sɪvəl 'raɪts/
 fast asleep /,fɑːst ə'sliːp/
 graduate from /'grædʒueɪt frəm/
 look up /,lʊk 'ʌp/
 space /speɪs/
 stand up /,stænd 'ʌp/

2.7 Writing  4.15

distant /'dɪstənt/
 loud thunder /laʊd 'θʌndə/
 fossils /'fɒsəlz/
 get stuck /get stʌk/
 lift /lɪft/
 directions /daɪ'rekʃənz/
 route /ruːt/
 turn a corner /tɜːn ə 'kɔːnə/

2.8 Speaking  4.16

all of a sudden /,ɔːl əv ə 'sʌdn/
 frightened /'fraɪtnd/
 go dead /,gəʊ 'ded/
 nightmare /'naɪtmeə/
 put on /pʊt 'ɒn/
 shocked /ʃɒkt/
 surprised /sə'praɪzd/
 torch /tɔːtʃ/

VOCABULARY AND GRAMMAR

1 Complete the sentences with the correct form of the verbs in the box. There is one extra verb.

collect develop discover do invent
observe take

- Edwin Hubble (1889–1953), an American astronomer, _____ galaxies through a telescope.
- Last month the scientists _____ specimens of some sea spiders from Antarctica.
- Make sure you _____ notes when we are at the museum.
- Do you know who _____ the electric guitar?
- This month two teams of archaeology students _____ research in South Africa.
- Linguists and psychologists are cooperating to _____ a new theory of language learning.

2 Complete the sentences with the correct form of the words in capitals.

- Mr Marco works as a _____ at the University of Alaska. **PHYSICS**
- We all tried to find the best _____ to the problem. **SOLVE**
- I want to study _____ at university. **CHEMIST**
- A _____ is someone who works to protect plants and animals. **CONSERVE**
- Take _____ of your desk before you buy a new computer screen. **MEASURE**
- The cost of space _____ is very high. **EXPLORE**

3 Use the prompts to write sentences.

- My computer / crash / while / I / download / a song.
- Tom / lose / his smartphone / when / he / run / in the park.
- The first international Internet chat / take place / in February 1989.
- It / be / so hot yesterday. The temperature / rise / to 38 degrees Celsius.
- What / you / do / this time last year?
- I / wait / for the photos from Sandra / last night / but / she / not / send / me any.

4 Choose the correct option.

- Broadband Internet *didn't use to be* / *weren't* so popular in the 1980s.
- Did your grandparents *use to buy* / *buy* a black and white television in the 1960s?
- We *did* / *used to do* a lot of exercises last weekend.
- My brother *used to spend* / *was spending* a few hours a day online.
- Last winter the temperature *used to fall* / *fell* to minus 28 degrees Celsius.
- Did they use to use* / *Did they use* GPS when they were climbing in the Alps?

USE OF ENGLISH

5 Choose the answer, A, B or C, that is closest in meaning to the underlined words.

- NASA is running a project on using 3D printers to make food in space.
A is analysing B is organising
C is planning
- When Anton was a student, he applied for his first job.
A studied B was studying
C used to study
- Lack of water is a permanent problem in this country.
A a problem that is always there
B a problem that is sometimes there
C a new problem
- X: When I was a child, I was in a serious car accident and I spent a month in hospital.
Y: What a nightmare!
A What a great story!
B That sounds frightening!
C Really? That's cool!
- My sister got lost in the forest, but, luckily, she managed to phone for help.
A suddenly
B eventually
C fortunately
- We analysed the data while we were talking online.
A before the online talk
B after the online talk
C during the online talk

6 Choose the correct answer, A, B or C, to complete both sentences.

- She _____ for her bag and took out the phone. We _____ home late in the afternoon.
A asked
B arrived
C reached
- They haven't published their research _____ yet. How much _____ do we need to print the documents?
A paper
B report
C ink
- The radio has warned of _____ temperatures today. Cook the pasta in _____ water for about 10 minutes.
A freezing
B boiling
C high
- I can't believe you've bought a desktop _____! To be a _____ scientist you have to be good at maths.
A rocket
B computer
C space
- As _____ as they discovered the cave, they started exploring it. They reached the top too _____ and spent hours waiting for the sunrise.
A soon
B early
C fast

READING

- 7 Read three texts about science and technology. Choose the correct answer, A, B or C.

Underwater forest

Several years ago, scuba diver Chas Broughton discovered an underwater forest of massive ancient cypress trees. Located twenty kilometres from the coast of Alabama, in the Gulf of Mexico, it is home for thousands of sea animals. Chas told a local journalist about the discovery, but they kept it secret until 2004, when Hurricane Ivan uncovered some of the trees. Then scientists started exploring the area.

They have suggested that the forest is more than 50,000 years old. In the past, the ocean level in the area was 125 metres lower than today, but when it rose, the water swallowed the trees up. The forest is so unique that conservationists are now working to make it a marine protected area.

- 1 The scientists
A found out about the discovery from a local journalist.
B started visiting the area after the 2004 hurricane.
C are trying to protect the forest.

Your ideas in 3-D

Are you interested in 3-D printing but don't want to buy another expensive gadget?

Then this offer is for you! Our 3-D printing service will help you produce a figure from your favourite video game, parts for a robot you are building in your basement, beautiful jewellery or decorations for your home. Just choose a design from our catalogue or create your own, decide what material, size and colour you want and send your project to us.

We will print the object and send it to you in no time!

For more information visit our website at:
www.wepaint3d.com

- 2 The advertisement is addressed to people who
A want to buy a 3-D printer.
B are professional designers.
C want to use 3-D printing technology.

Last week I took part in an unusual survey. A psychologist invited forty-four families and asked us different questions about eating habits now and in the past. She wanted to find out why fathers give children less healthy food than mothers. Strange, isn't it? But it's true in my family.

When my mum isn't at home for dinner, Dad orders a pizza. Mum doesn't accept unhealthy food because she feels responsible for what we eat. Dad cares more about my education or hobbies.

According to the survey, in most families the situation was and is similar. Teenagers observe their parents and learn how to behave in the future. My parents used to observe their parents and now I am observing them.

- 3 The survey the writer took part in shows that
A mothers and fathers look after families in different ways.
B fathers don't care about families as much as mothers.
C teenagers would like to change eating habits in their families.

SPEAKING

- 8 In pairs, complete the questions with one word in each gap. The first letters are given. Then ask and answer the questions.

- 1 W_____ do you use the Internet for?
- 2 Do you use s_____ media? Why?/Why not?
- 3 What i_____ do you find the most useful? Why?
- 4 What were you doing y_____ at 8 p.m.?



- 9 In pairs, write down five words to describe the photo.

- 10 Imagine you are one of the people in the photo. Answer the questions.

- 1 When was it?
- 2 What was the weather like?
- 3 Who were you with?
- 4 What were you doing? What happened?
- 5 How did you feel about it in the end?

- 11 When was the last time you got lost? What happened? Discuss with a partner.

WRITING

- 12 Read the writing task and write the story.

You agreed to write a story for the *Me and Technology* section of your school newspaper. The title of your story is: *The day technology saved me*. Remember to:

- explain when and where the situation happened.
- describe the events and show their sequence using the correct past tenses.
- make the story interesting for the reader.
- give your story an interesting ending.