

Action Pack 10

Tenth Grade

Student's Book

Edwina Johnson

Action Pack is a twelve-level course for Jordanian students, leading them from the Basic to the Secondary stage. It is based on the most modern methods of teaching language, combining a topic-based approach with functional language practice, careful attention to grammar and vocabulary and a comprehensive skills syllabus.

This level is for Grade 10 students.

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Cover Photograph: A coral reef at Aqaba



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Acknowledgements

The publishers and the writers would like to acknowledge the contribution made by the Review and Adaptation Committee appointed by the Ministry of Education of the Hashemite Kingdom of Jordan, through their guidance and valued assessment of the materials, to the development of the *New Action Pack 10* course.

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قررت وزارة التربية والتعليم تدريس هذا الكتاب في مدارس المملكة الأردنية الهاشمية بوجوب قرار مجلس التربية والتعليم رقم ٢٠١٣٥٦ في جلسه رقم ٤/٢٠١٣/٦٦١٧ بدءاً من العام الدراسي ٢٠١٤/٢٠١٣.

The Ministry of Education has decided to adopt this book for Jordanian schools in accordance with the approval of the Board of Education decision No. 56/2013 in its meeting No. 4/2013 on 17/6/2013 for the 2013/2014 academic year.

التدقيق: ملك محمد امساد
المراجعة: منال فاهد ابورمان

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ISBN: 978-614-406-517-4
Printed 2013
Reprinted 2014-2019

York Press
322 Old Brompton Road,
London SW5 9JH, England

Pearson Education Ltd
Edinburgh Gate, Harlow,
Essex CM20 2JE, England
and associated companies throughout the world.

House of Education Ltd
Woodbourne Hall,
P.O. Box 916,
Road Town,
Tortola,
British Virgin Islands



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Contents

FIRST SEMESTER

Module 1	Starting out	3
	A new business idea	4
Module 2	The natural world	11
Unit 1	Rainforests	12
Unit 2	Treasures of the earth	18
Module 3	Science	25
Unit 3	The Nobel Prize	26
Unit 4	Science and scientists	32
Revision A		39

SECOND SEMESTER

Module 4	Journeys	41
Unit 5	Exploring wildlife	42
Unit 6	Planning a trip	48
Module 5	Climate and Earth	55
Unit 7	Weather and climate	56
Unit 8	Earth	62
Module 6	Tourism	69
Unit 9	Tourist attractions	70
Unit 10	Cultural tourism	76
Revision B		83
Extra reading A		85
Extra reading B		89

MODULE

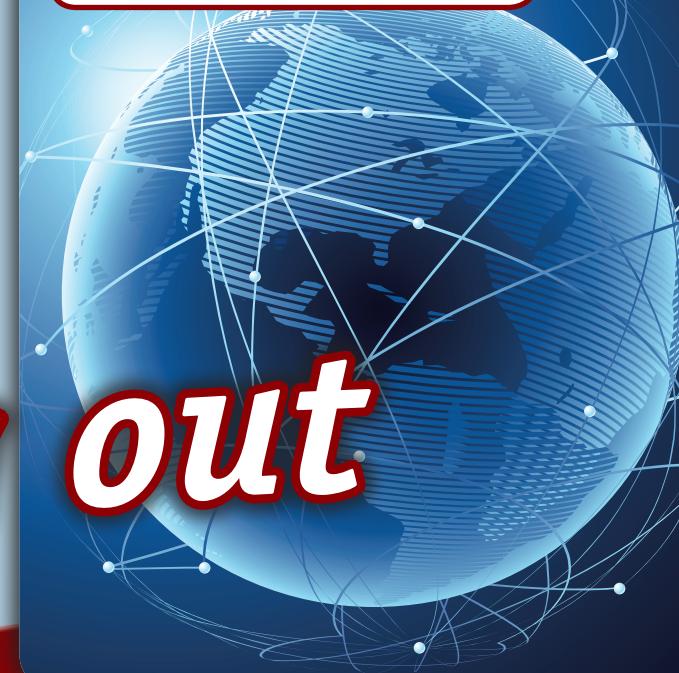
1



What do you think these objects are used for?

Can you think of an idea for a new product like this one?

What do you think this photo represents?



Starting out

Outcomes

- To read tips for successful businesses, advertisements and about a young inventor
- To listen to a text about a young Jordanian inventor
- To use vocabulary related to business and jobs
- To talk about career plans for the future
- To take part in a debate about inventions
- To write a job advertisement and a letter applying for a job

Project

Design and describe a new product or service.



A new business idea

Reading strategies

Topic sentences

- A topic sentence expresses the main idea of the paragraph where it is present. It is usually the first sentence in a paragraph. It can be in the form of a statement or a question.
- Read the text and think of possible questions that each passage would answer.

BEFORE YOU BEGIN

- 1 What are your plans for the future? Have you ever had a good idea for a new product or service? Work in pairs and compare your answers.
- 2 Read the words in the box. Which ones are related to business? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.
original product service customer typical
- 3 Read and listen to the text. If you want to be a successful business person in the future, what skills and qualities should you have?

A Have you got something special?

Your business idea doesn't have to be original, but it has to be different from everything else. Make sure you offer something new.

5 B _____

Is your idea going to be popular with enough people? Will people feel that they need to get the product? Some market research will help you find out.

10 C _____

If your product or service costs too much, your customers won't buy it. Talk to your future customers to find out whether your price is affordable.

15 D _____

Who are your typical customers? What will they value in your product or service? Find out as much as you can about your future customers.

E _____

20 How much will it cost to produce your idea? When you work out your costs, don't forget about factory costs, salaries, office equipment, etc.

F _____

Even the best business ideas won't work if you 25 don't have the skills and the ambition. You will only succeed if you want to!

G _____

Can you build on your idea in the future by adding new products or services, entering new areas, or 30 improving the original design?

COMPREHENSION

4 Read the text again. Then, match the questions with the correct paragraph.

Do you think you've got a great business idea?

- 1 Can you afford to start your business?
- 2 Do you have the right experience and skills?
- 3 Have you got something special?
- 4 Is the price right?
- 5 Is there a market big enough for the product?
- 6 Who will your customers be?
- 7 Will your business grow?

5  Read and listen to the text again and answer the questions. Discuss your answers in a group.

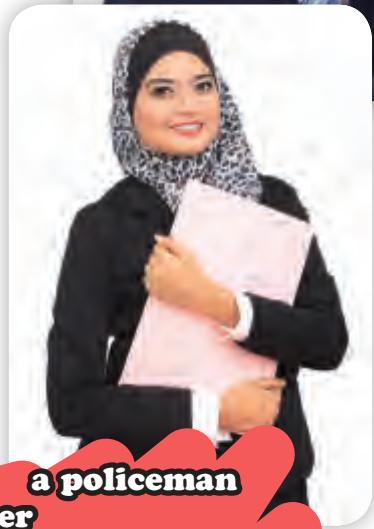
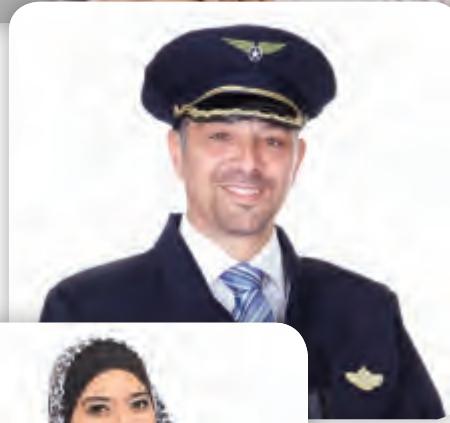
- 1 Rearrange the questions 1–7 from exercise 4 in order of importance to you.
- 2 Is it better to make an expensive product of very good quality or a cheap product of lower quality?



GRAMMAR

6 Complete the sentences with the correct form of the verbs in brackets.

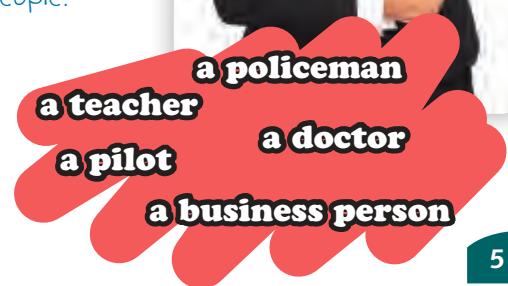
- 1 I _____ (not / see) my best friend Asma since September.
- 2 If you eat too many sweets, you _____ (have) stomachache.
- 3 I'm _____ (buy) a new laptop next year if I have enough money.
- 4 Omar _____ (be) in Jordan for more than two weeks now.
- 5 He _____ (pass) the English exam if he studies hard.
- 6 If we go to France in the summer, we're _____ (visit) the Eiffel Tower.
- 7 Sawsan and Laila _____ (be) friends for five years.



SPEAKING

7 Work in pairs. Say what you would like to be in the future and why. Use these words.

I am going to be a doctor because I like to help sick people.





water carrier



portable fridge

READING

- 1 Look at the pictures above. How useful do you think the two products are?
- 2 Read the article and check your answers.



A young inventor

Emily Cummins began 'inventing' when she was only four. She enjoyed making things from waste material, like making toys from old things she found in her grandfather's garden.

5 As she got older, she learnt more about different materials and how to use different tools. She was working on a school project when she had an idea to help millions of people – a small, portable fridge to keep 10 medicines or small food items clean, dry and cool.

In many parts of the world, people haven't got electricity. However, that doesn't mean 15 they have to live without a fridge. Emily's fridge is ideal because it doesn't use electricity.

People can build it using old car parts and other objects from their homes.

After she finished school, Emily went to Africa to work on her design. She spent five 20 months in Namibia, testing out her fridge.

She decided not to produce the fridge for profit. Instead, she gave the design to people in Africa for free, so that they could produce their own portable fridges following her 25 instructions.

Emily also invented a special water carrier. African women and children often have to walk long distances every day to collect water, and they can only carry a few containers at 30 a time. However, with Emily's water carrier, they can carry up to five containers of water. She made the wheel out of tree branches and used old tyres to keep the containers in place. People can also use the product to carry firewood or other heavy objects.

Emily has won many awards, including Woman of the Year in 2009 CE (Common Era) and a 'Save-the-Planet' award in 2008 CE.

COMPREHENSION

3 Read the article again and answer the questions.

- 1 What do the pronouns in **bold** refer to?
- 2 How are Emily's products different from the usual ones we know of?
- 3 How did Emily develop her skills when she was younger?
- 4 Why didn't Emily sell her fridge design?
- 5 Other than water, what can the water carrier be used for?
- 6 What other low-cost inventions do you think Emily could make to make life in Africa easier?
- 7 What skills and qualities do you think one should have to make such inventions?

Research box



Emily's fridge doesn't need electricity to work, but a fridge needs water to make ice. How can you use water to make electricity?

VOCABULARY

4 Find in the text...

1 two words that are parts of a car.

2 two words that mean something that holds another thing.

3 a word that means something you use for fixing things.

4 a phrase that means the opposite of 'for free'.

5 a word that means guidance you give to someone on how to do something.

6 a word that means a thing you get if you have done something that helps lots of people.

7 a word that means unwanted or unusable.

SPEAKING

5 Work in a group. What do you think about Emily's inventions?

Have a debate about which invention is more useful.



VOCABULARY: Business

6 Match the verbs with the correct phrases.

1 set up	a market research
2 do	b a business
3 find out	c a profit or a loss
4 work out	d a service
5 make	e a product
6 provide	f about your customers
7 design	g your accounts
8 do	h your costs





LISTENING

- 1 What kind of things do you think should be invented? Why?
- 2 Listen to Samer Abu Kouta talking about his invention. What does his invention do?
- 3 Listen again and complete the information in the box.



1 Name: Samer Abu Kouta

2 Age: eighteen

3 Kind of invention:

4 Customers:

5 Two main reasons for the success of the product:

.....

.....

SPEAKING AND WRITING

- 4 In a group, write a list of the tasks you have to do at home or at school.
- 5 Now design a product to make one of these tasks easier. Your product should ideally only use waste materials and old things from your home or garden. Describe your product in two paragraphs.
- 6 Describe the materials and the product to the class. Who has the best product?

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



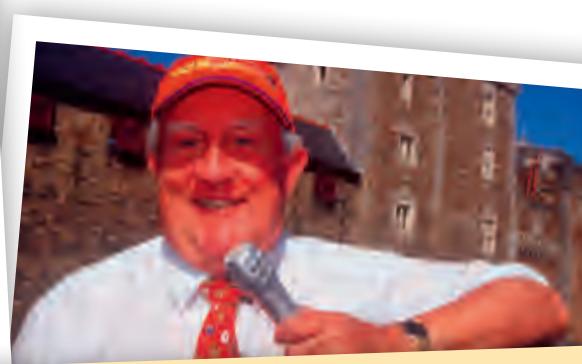
I never did anything by accident, nor did any of my inventions come by accident; they came by work.

Thomas A. Edison, inventor (1847 CE–1931 CE)



READING

7 Read the two job advertisements. Which job would you apply for? Why?



Childminder

A family is looking for an enthusiastic, hard-working childminder to look after young children during the school holidays.

You have to plan indoor and outdoor activities daily. You have to tidy up after all activities and give the children simple meals and drinks.

If you are friendly and enjoy games and sport, you can earn a good salary and do an enjoyable, useful job at the same time.

Tour guide

Our town needs a tour guide to help us in the summer holidays, Sundays – Thursdays, from 10am to 5pm.

The salary will be low at first, but you don't have to have any qualifications or experience except enthusiasm and ambition.

You have to learn some facts about the town's history and take people on tours of the most important historical sites.

This job is ideal for anyone, male or female, unemployed or recently graduated.

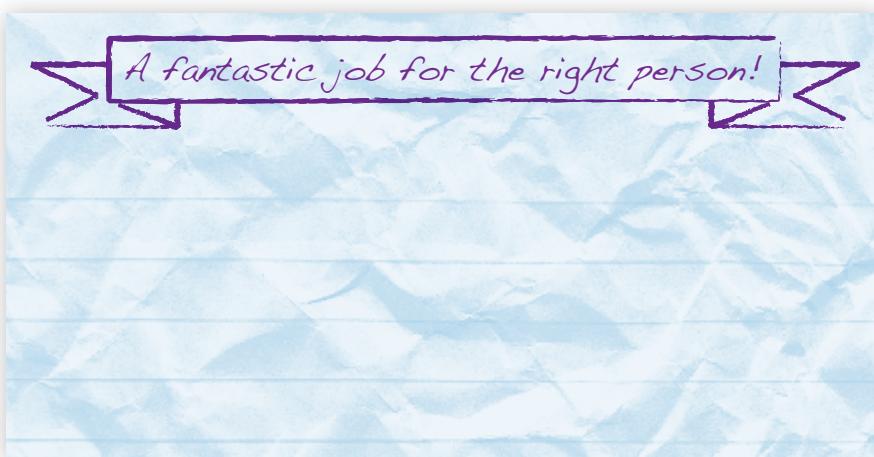
COMPREHENSION

8 Read the two advertisements again. Answer the questions.

- 1 What kind of work does each job involve?
- 2 What skills and qualifications do you need to do these jobs?
- 3 What salary do you think you could earn?
- 4 Do you think you would enjoy these jobs, and why?
- 5 What other jobs that offer services to help people can you think of? Explain.

WRITING

9 Now think about your ideal job and design your own advertisement for it.



Writing strategies

Writing an advertisement

- Think about what your ideal job is.
- Describe the job and the ideal person for it.
- Think about who you want to apply for the job.
- Look at the models in exercise 7 to help you.

10 Look at the other job advertisements your class has designed. Choose one and write a letter applying for that job.

Project

Design and describe a new product or service.



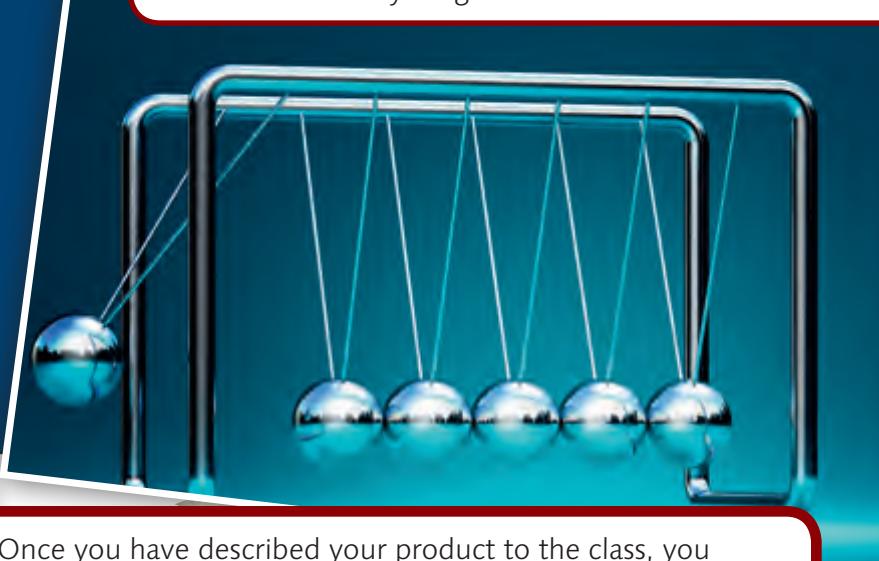
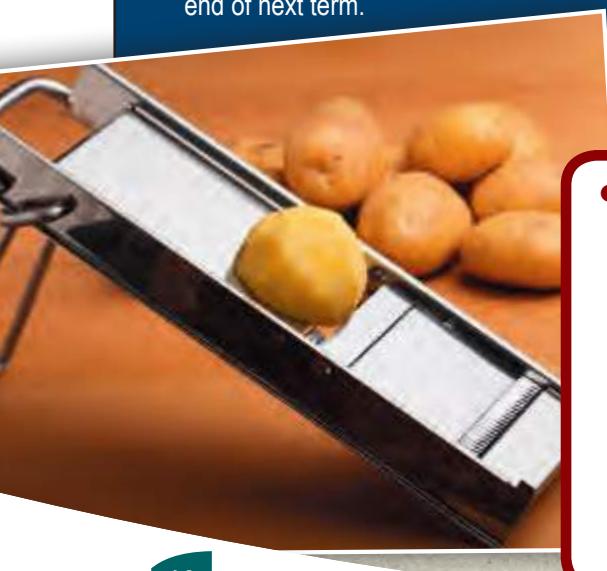
Your task

- Read the details of the competition and then, with a partner, try to win it.
- Answer the questions.
- Design and describe your new product or service. Include an illustration if possible.
- Prepare a talk about your product or service for the rest of the class. The class will vote on the winning idea.

New Product Competition

We are looking for young business ideas! The winner will get an award, and top companies will help to produce their product or service.

- ★ You don't have to make your product, but you must send us an illustration and a detailed description of how it works.
- ★ The product doesn't have to be original, but you mustn't copy an existing product. Your product must be different from anything that already exists in the market.
- ★ You don't have to enter on your own; you can work as a pair or group.
- ★ You must be younger than eighteen and a student at school.
- ★ You mustn't apply later than the end of next term.



Questions

- What is your product or service?
- Where and how can you use it?
- What materials is it made of?
- How will you make it? Will you need help?
- How much will it cost to make?
- How much will it cost to buy?
- Is it similar to anything else on the market? How?

- Once you have described your product to the class, you should have a good idea of its good features. Think about these good features (make improvements if you need to), and make an advertisement for your product.
 - Is it affordable (cheap)? Or is it good quality?
 - How is it new or exciting?
 - Who is it made by? (You need an attractive company name)
 - Who are your customers?
 - Where can your customers buy it?



MODULE
2

Where are these mountains located? What have scientists found here?

What type of bird are these? Where do they live?

What is this precious stone?

The natural world

Outcomes

- To read about rainforests, a nature reserve in Jordan, the oldest trees, precious stones and a museum in Jordan
- To listen to a radio programme about life on Earth and a guide to precious stones
- To use vocabulary related to rainforests, animals, plants and precious stones
- To talk about tasks, saving the rainforests, trees, precious stones and a museum in Jordan
- To use the Present Perfect with *yet* and *already*, and modal verbs of possibility
- To write about saving the rainforests, the oldest trees, precious stones and treasures

Project

Write about the discovery of a treasure.

Unit 1

Rainforests



Grammar

the Present Perfect
with *yet* and *already*

BEFORE YOU BEGIN

- 1 Listen to the sounds of a rainforest. What can you hear? Where in the world can you find rainforests?
- 2 Which words refer to creatures that can be found in rainforests? Which words are connected to rainforests? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

tropical habitat hidden volcano bat
spider kangaroo rat logging

- 3 What is the hidden world that the scientists have discovered? Read and listen to the article to find the answer.

A HIDDEN WORLD

The bright colours of birds, the call of monkeys and the hum of insects are common sights and sounds in a tropical rainforest. Rainforests grow near the Equator, where it is always warm and wet – the perfect habitat for plants and animals.

In Papua New Guinea, scientists have just discovered a new rainforest. It has existed for many thousands of years at the top of a mountain. It has always been very difficult to reach. Even the people who live on the slopes of Mount Bosavi have rarely visited this hidden rainforest. It is very high up, at over 2,500 metres above sea level, and it is hidden inside the hole of a huge volcano.

In 2009 CE, an international team of scientists visited Mount Bosavi and discovered an amazing

world of plants and animals there. They discovered many colourful, tiny frogs, some unusual species of fish, rare bats and spiders, a kangaroo that looked like a small bear, and a giant rat that was as big as a cat. Altogether, the scientists found more than forty new species of animals, as well as many rare or new plants. Today, though, this beautiful hidden world is in danger. Logging has already begun in the area. The loggers have already destroyed a lot of trees in the area, but they haven't reached the slopes of Mount Bosavi yet. The scientists hope that their findings can help to protect the area.

COMPREHENSION

4 Read and listen to the article again. Then, answer the questions.

- 1 Choose another suitable title for the text. Justify your choice.
- 2 What do the pronouns in **bold** refer to?
- 3 What makes a rainforest special and different from other forests? Explain.
- 4 How will the discoveries that the scientists made help protect the rainforest?
- 5 Do you think rainforests are important and should be preserved? Why/Why not?
- 6 In your opinion, how can we contribute to the protection of rainforests?

GRAMMAR: The Present Perfect with *yet* and *already*

5 Answer these questions using *yet* or *already* to form complete answers.

- 1 Have you been to the art gallery?
No, *I haven't been there yet*.
- 2 Have you read the book about the history of Jordan?
Yes, _____.
- 3 Have you called your friend to check if he's well?
No, _____.
- 4 Have you found your keys?
No, _____.
- 5 Have you booked your ticket to Dubai?
Yes, _____.

6 Use the Present Perfect and the words in brackets to write complete statements or questions.

- 1 I / visit / the Children's Museum. (already)
I've already visited the Children's Museum.
- 2 We / not finish working on the science project. (yet)
Have we not finished working on the science project?
- 3 Nader / travel / to England. (already)
Nader has already travelled to England.
- 4 I / call / my mother. (already)
Have I already called my mother?
- 5 They / not save / the rainforests. (yet)
Have they not saved the rainforests?

SPEAKING

7 Read the list of tasks that Sarah and Ali's parents have left for them. What have they already done? What haven't they done yet? Use the Present Perfect and *already* / *yet*. Work in groups.

Sarah

- buy bread (X)
- tidy bedroom (✓)
- put away plates and cups (X)
- do homework (✓)

Ali

- do homework (✓)
- set the table for lunch (X)
- return library books (✓)
- tidy bedroom (X)

Sarah hasn't bought the bread yet.

8 Work in pairs. What have you already done today?

What haven't you done yet?

Use the Present Perfect and *already* / *yet*.

A: *I've already packed my schoolbag for tomorrow.*

B: *I haven't found a topic for my project yet.*

Read the Hadith. Try to translate it into Arabic, and then explain what it means.



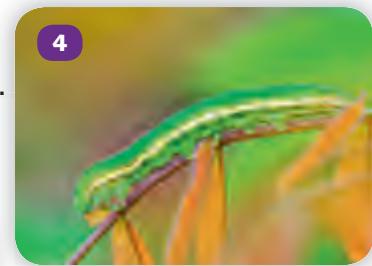
Prophet Mohammad (Peace Be Upon Him) said "There is none amongst Muslims, who plants a tree or sows seeds, and then a bird, or a person or an animal eats from it, but is regarded as a charitable gift for him."

*Sahih Al Bukhari,
V3, Agriculture*



VOCABULARY: Animals

1 In your notebook, label the pictures below, then write a sentence describing each animal.



2 Write the names of the following animals in the correct column.

shark	snake	fly	toad	frog	monkey	crocodile
caterpillar	bear	hummingbird	ray	ray	parrot	

Insects	Fish	Birds	Reptiles	Mammals	Amphibians
fly					

Listening strategies

Extracting main ideas

- Listen to the first question on the tape. It introduces the main ideas of the topic.
- Pay attention to linking words that might help you find the main ideas, such as *because*, *in addition*...
- You don't have to understand all the details in the tape. Simply, look for the sentences that give the main ideas.

LISTENING

3 Listen to a radio programme about life on Earth. Which three things make up life on Earth?

4 Listen again and answer the questions.

- 1 Is the information provided in the audioscript fact or the speaker's opinion? Explain.
- 2 What is the main idea of the listening passage?
- 3 How does the speaker describe planet Earth in his speech?
- 4 What is the importance of plants on Earth?
- 5 According to the speaker, life on Earth exists because there is water. Give two ways of conserving water on Earth.

PRONUNCIATION

5 Listen to the words in the box. Notice the sound of the *r* at the end of the words. Repeat them.

spider	discover	equator
their	bear	caterpillar

Say *programme*. Is the sound of the final *r* the same as it is in the middle of the word?

READING

6 Complete the article with the words from the box.

insects extinct plants surface
oxygen logging species



Rainforests cover six per cent of Earth's (1) surface. The biggest forests are in South America, Africa and Southeast Asia.

About seventy-five per cent of all the (2) _____ of animals we know live in rainforests, including some beautiful birds, (3) _____ and reptiles. Many of them live in the trees, over thirty metres above the ground. There are also thousands of different (4) _____. It is hot in the rainforest and the ground is wet.

The rainforests are very important for us because they make the (5) _____ that we breathe. They also help to control the weather.

In many rainforests, loggers have already cut down trees because farmers want the land. Some of the animals that lived in the forest have become (6) _____.

(7) _____ is a big problem today in much of the world. We must save the rainforests. They haven't disappeared yet, but they are in danger!

SPEAKING

7 In groups, discuss what people can do to save the rainforests.

WRITING

8 Write a paragraph about why we should protect the rainforest.

First, write about why the rainforest is important. Then, write about how we can save it.

Speaking strategies

Giving opinion

- Don't translate everything you want to say in English when you are speaking.
- Avoid talking about things that are difficult to express in English.
- When you speak in English, simplify what you want to say.

Research box



There are four main parts of a rainforest.

What are the top two layers called?

READING

- 1 What places do you think visitors to Jordan would like to see?
- 2 Read Julia's email to Sally about her visit to Jordan. Which places does she mention?



Hi Sally,

Hello from Jordan! I'm here on holiday with my family and I've already been here for a week. Although I haven't seen all of the sights yet, I've already been to some interesting places. We 5 went to Ajloun Forest Nature Reserve yesterday. The nature reserve has protected all of the animals there since 1978 CE. I saw a lot of animals that I have never seen before, like hyenas and wolves. My favourite animal was the porcupine.

The reserve is also special because of the trees. There are many 10 trees that we don't have in Britain, like pistachio, strawberry and carob trees. We also saw the black iris flower. This flower is special because it is the national flower of Jordan! There are also orchids and tulips. A guide showed us around the reserve. In the spring and summer, visitors can stay in cabins at the reserve. I'd 15 like to stay there next time we visit; it sounds very exciting!

Tomorrow we're going to visit the Roman Theatre in Jerash. We're also going to visit Amman soon. I'm very excited!

The weather here has been lovely. It is warm and sunny. I haven't taken many photographs yet, but I still have two more 20 weeks here.

I hope you liked the postcard I sent!

See you soon

Julia

GRAMMAR: The Present Perfect with *yet* and *already*

- 3 Some of the following sentences are wrong. Underline the mistake then correct it, and put a tick next to the correct sentences.

1 Julia has been to Ajloun Forest Nature Reserve yet.

2 Julia has already taken some photos.

3 Julia hasn't already seen the hyenas and wolves.

4 Julia hasn't seen the Roman Theatre in Jerash already.

5 Julia hasn't stayed in the cabins at the nature reserve yet.

- 4 Write your own sentences about the places you have been to in Jordan and the places you haven't visited, using *yet* and *already*.

I have already been to Ajloun, but I haven't been to Hammamat Ma'in yet.

VOCABULARY: Animals, trees and flowers

5 Write the animals, trees and flowers from the email in exercise 2 in the correct column.

Animals	Trees	Flowers
hyena		

READING

6 Read this leaflet about two types of trees. Why are they special?

The Oldest Trees on Earth

The Bristlecone Pines

They are in California, USA.
They are the oldest trees alive in the world today.
Some are more than 4,000 years old.
The rings in their wood show how much they've grown.
Scientists use these rings to see how the world's climate has changed.
They grow very slowly: about fourteen metres in 3,000 years!

The Wollemi Pines

They are the oldest species of tree in the world.
Fossilised remains show they existed 110 million years ago.
They grew in the rainforest before Australia became a continent.
They grew when there were dinosaurs on Earth. The climate was different then.
They still grew when plants and animals died and the climate changed.
Some trees of this type still exist in Australia.
Nobody knows how old these trees are.
Scientists want to save them; they still didn't reveal their precise location.
They grow very fast; some are forty metres high!

SPEAKING AND WRITING

7 How are the Bristlecone Pines and the Wollemi Pines different?
Read the information again and take notes. Compare and contrast ideas with a partner.

8 Use the information in exercise 6 and your notes from exercise 7 to write a leaflet about two other old trees in the world. Use the leaflet above as a model. Add your own research and include a picture. Then present your work to the class.



Unit 2



Treasures of the earth

BEFORE YOU BEGIN

Grammar

Modal verbs of possibility: *must, might, could, can't*

- 1 Look at the photographs. Why are these stones treasures? How easy or difficult is it to find them?
- 2 What colour are these stones? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.
- 3 Can you guess the correct precious stones in this quiz? Read and listen to find the answers.

ruby amber diamond emerald pearl

Radio interviewer: Saleem and Tareq? I'm going to give you some clues about a precious stone. You guess the correct precious stone from my description. Are you ready?

5 **Saleem and Tareq:** Yes, we are!

Radio Interviewer: These precious stones are some of the hardest stones on Earth. Some are millions of years old. They come from many different continents, but no one has found them in 10 Europe.

Saleem: It might be ruby because it is a hard precious stone.

Tareq: It can't be amber because amber is found in northern Europe.

15 **Saleem:** I know! It must be diamond!

Radio Interviewer: Yes, you're right. Well done! Now, this precious stone is red. It can sell for higher prices than diamond.

Tareq: This one must be ruby. Rubies are red.

20 **Saleem:** Yes, it can't be emerald because emeralds are green.

Radio interviewer: Yes, you're right! Now, this one is precious, but it isn't a stone. It grows in the shell of an oyster. It has many colours: white, 25 yellow, pink, blue and even black.

Saleem: It could be amber. Amber has many different colours.

Tareq: No, it can't be amber because amber doesn't grow in the shell of an oyster. I think it 30 must be pearl.

Radio interviewer: Yes, well done Tareq! It is pearl. This last precious stone is usually green, but it can also be pale blue. Today, it usually comes from Colombia in South America.

35 **Saleem:** This must be emerald. Emeralds are blue and green.

Radio interviewer: Yes, you're right. Well done, boys!

VOCABULARY: Precious stones

4 Label the precious stones in the photographs with the words from the box.

emerald ruby amber pearl diamond



1



2



3



4



5

COMPREHENSION

5 Read and listen to the quiz again and answer the questions.

- 1 Which precious stone is formed within a type of a marine animal?
- 2 Which precious stone is found in all continents except for one?
- 3 What are the characteristics of an emerald?
- 4 What other 'treasures of earth' can you think of? Explain.

GRAMMAR: Modal verbs of possibility: *must, might, could, can't*

6 Read the exercise very carefully. The modal verbs are in the wrong place. Put them back into their positions.

Saleem and Tareq are at the train station to pick up their aunt. They think they have seen her.

Saleem: That (1) can't be Aunt Salma. I can't see her very well.

Tareq: It (2) might be her. She's very early. Her train doesn't arrive until quarter past seven.
It (3) must be someone who looks like her.

Saleem: It (4) could be her. She's looking at us, smiling and walking towards us now!

7 Choose the correct modal verb in the dialogues.

1 **A:** I'd like a cheese sandwich.

B: There can't / must be some cheese in the fridge.
I bought some yesterday.

2 **A:** Where's Nadia?

B: She might / can't be at the library. She always goes there after school.

3 **A:** I don't know where my phone is.

B: It can't / could be at work. You didn't take it with you this morning and you were using it last night.

SPEAKING

8 Work in a group. Choose an object that you can see in class. Describe it to your friends briefly by giving them hints. Can your friends guess what the object is? Use *can't, might, must* or *could* to guess the answers.

Research box



Which is the softest precious stone? Which is the hardest?

LISTENING

1 Listen to a zoologist and botanist, Robert Allen.

He is describing his favourite precious stone.

Which precious stone is it?

2 Listen to Robert Allen again. Answer the questions.

1 How many pieces of amber does Robert Allen have?

He has more than two hundred pieces.

2 What happens when you rub a piece of amber?

3 How was amber formed?

4 What did people use amber for in the past? Why was it used for that purpose?

5 Why do you think some pieces of amber are so expensive?

6 Do you think you would be able to find amber where you live? Explain by giving reasons.

3 Now complete a part of Robert Allen's description with the correct words from the box.

jewellery traded brown millions trees call
frogs have long unusual



Reading strategies

Completing a text

- Read through the text first to have an idea of what it is about.
- Look at the words in the box. Think about how each word is used.
- Look at each gap and consider the best word to insert in the gap. What type of word do you need in the gap? A noun, adjective or verb? Why is your chosen word correct? Why are the other words incorrect?

Amber also has a surprising secret. Many (1) millions of years ago, amber was a sticky resin inside trees. As this sticky resin came out of the (2) _____, lots of small plants and animals fell into it. After a million years or so, the resin became very hard and fossilised. It is this fossilised resin that we (3) _____ amber. The plants and animals that fell into it are still inside, perfectly preserved. Spiders, (4) _____, flies, small lizards, flowers and leaves are all still there, exactly as they were in life.

Amber has a (5) _____ history. Archaeologists have discovered that some people (6) _____ amber for food and clothes 6,000 years ago, and we also know that the Romans used it in a lot of (7) _____. Amber has many different colours: gold and orange, white or yellow, (8) _____ or black. I have just bought several pieces of red and green amber, which are (9) _____, but I don't (10) _____ any blue amber in my collection yet. It is rare and too expensive.

READING

4 Read the article about emeralds in Egypt. Which Ancient Egyptian queen loved emeralds?

Emeralds in Egypt

The value of emeralds has been known for centuries and even in ancient times. The Aztecs in Mexico and the Incas in Peru held them in high regard. However, the oldest emeralds were found in Egypt, near the Red Sea. Many Egyptian pharaohs took emeralds from the mines there. The mines were actually known as 'Cleopatra's mines' because Cleopatra liked to wear the stones. She wore jewellery made from emeralds and decorated many ornaments with the jewel. Cleopatra presented noble visitors with carved emerald sculptures that looked like the Queen.

The Ancient Egyptians believed that

15 emeralds were not only beautiful but were also able to cure disease. Historians know that these emeralds were a lighter colour green than many emeralds found today, but they were highly valued in Ancient Egypt.

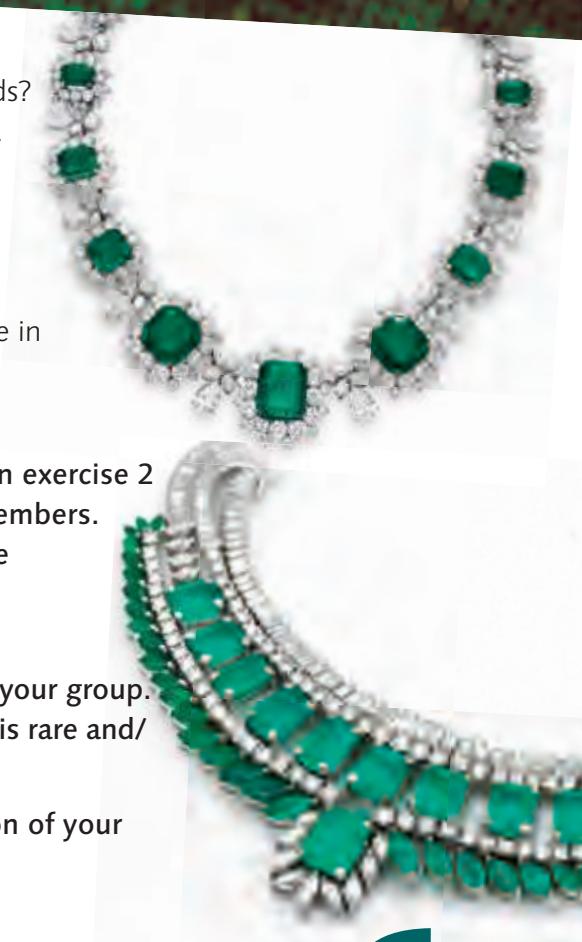
20 There were many emeralds in these mines. In later times, the Romans and the Turks took emeralds from these mines, so overall the 'Cleopatra mines' were in use for over 1,500 years! When these mines were found again in the early nineteenth century, there were no emeralds left. There are now no more emeralds left in Egypt, but the Ancient Egyptian era represents the beginning of the jewel's long history. Now, the majority of the 25 world's emeralds can be found in Colombia.

30

COMPREHENSION

5 Now read the text again and answer the questions.

- 1 Which two civilisations in Ancient America valued emeralds?
The Aztecs in Mexico and the Incas in Peru valued emeralds.
- 2 How did Cleopatra use emeralds?
- 3 Why did the Ancient Egyptians value emeralds?
- 4 What colour were the emeralds found in Egypt?
- 5 How long were emeralds mined for in Egypt?
- 6 Do you think Colombia will also use up all its emeralds like in Egypt? Explain.



SPEAKING AND WRITING

6 Imagine that you have found one of the precious stones in exercise 2 on page 18. Work in groups. Describe it to your group members. Then listen to the other members and write notes. Decide whether their stones are rare and/or expensive or not, with reasons.

7 Choose one of the precious stones that were described in your group. Describe it to the class. Explain why you think their stone is rare and/or expensive, or not. Does the class agree with you?

8 Use your notes from exercise 6 to write a short description of your group's precious stone.

READING

- 1 Have you ever been to a museum? What did you see there? Why are things kept at a museum?
- 2 Read the article below. How objective is the speaker?



Have you ever visited the Jordan Archaeological Museum in Amman? It is a very special museum at the top of Citadel Hill. There are many treasures inside the museum. Scientists found the treasures at many archaeological sites in Jordan.

- 5 One of the oldest treasures in the museum is the collection of statues from Ain Ghazal dating back to 6000 BC. The people from Ain Ghazal painted the statues to show clothes and hair. **They** often used shells for the eyes. These statues are very beautiful.
- 10 There is a very large collection of Islamic Art from the Umayyad, Mamluk and Ottoman periods. You can see very beautiful vases, bowls, jugs, plates and carved stones. There is also a large collection of coins. Visitors can also see armour, shields and swords.
- 15 Many people also come to the museum to see the famous copper scroll which was found by archaeologists in 1952 CE. It is the only copper scroll in the world and it tells us about gold and silver treasures as well as where people hid **them** a long time ago.
- 20 The museum also lends artefacts to other museums across the world. These museums have special exhibitions about Jordanian art and culture. Many people in the world can then learn about our history.

Both local people and visitors to the city come to the museum every day. It is open from eight o'clock to six o'clock every day apart from Fridays. On Friday, **it** closes at four o'clock. Visit the museum this weekend with your family!

COMPREHENSION

- 3 Read about the Jordan Archaeological Museum again. Answer the questions.
 - 1 What is the main idea of the text?
 - 2 What do the pronouns in **bold** refer to?
 - 3 What objects of Islamic Art can you see at the museum?
 - 4 What is the importance of the copper scroll?
 - 5 What other things in Jordan do you think should be kept at the museum? Explain why.
 - 6 In your opinion, why is it important to learn about history from around the world?

SPEAKING

4 Work in pairs. What would you like to see most in a museum? Explain.

PRONUNCIATION

5 Can you say this proverb? Use the pronunciation table at the end of your **Activity Book Glossary** to help you.

/hi hu: faɪndz ə frend, faɪndz ə treʒə/

What do you think this proverb means? Translate it into Arabic, then in pairs compare your answers.

READING AND VOCABULARY

6 Read about the Gold Market in Amman. What can people buy in the Gold Market? Complete the text with the words from the box.

special enjoy necklaces Gold silver

Many visitors to Amman (1) enjoy looking around the lovely shops and markets in the city, but there is one area that is very (2) Near King Faisal Street and between Al Husseini Mosque and the Citadel, people can visit the (3) Market. Here, you can buy gold and (4) items, especially jewellery. Visitors are sometimes surprised when the shopkeeper weighs the item to decide the price. There are bracelets, (5) and earrings. The Gold Market is very beautiful!

7 Now listen and check your answers.

SPEAKING

8 In groups, choose a treasure and describe it. Answer the questions.

- 1 What is the treasure? Is it a decoration, a sword or something else?
- 2 Which precious stones does this treasure have? Are there many of them?
- 3 Are there any precious stones that this treasure doesn't have? What are they?
- 4 Who do you think this treasure was for?

WRITING

9 Write a short description of the treasure you chose in exercise 8.

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



All the gold upon the earth and all the gold beneath it, does not compensate for lack of virtue.

Plato, philosopher (c. 427 BC–c. 347 BC)

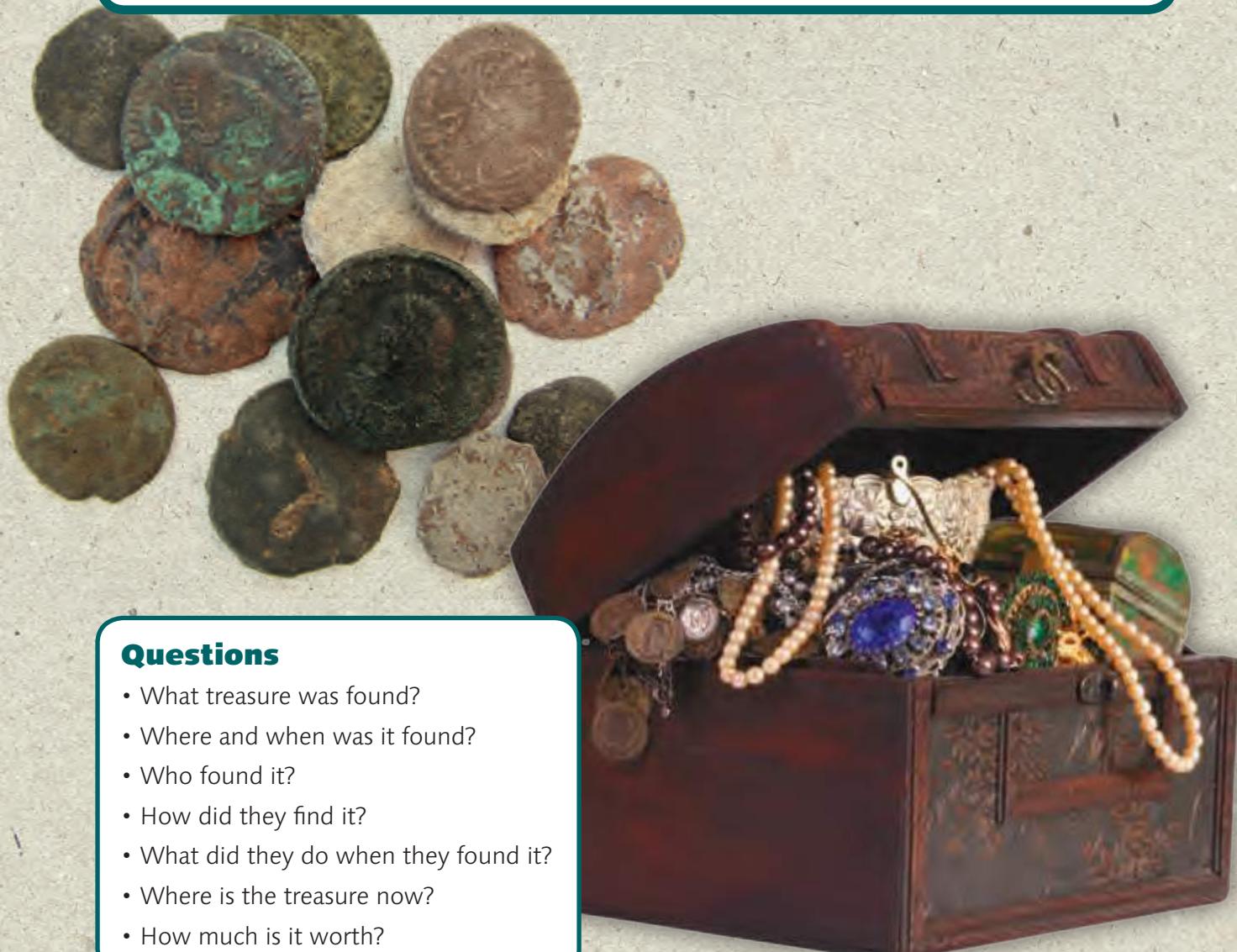


Project

Write about the discovery of a treasure.

Your task

- Research the discovery of a treasure anywhere in the world. Use books, magazines, the school library, a public library and the Internet.
- Answer the questions. Take notes. Try not to copy. Use your own words.
- Write a newspaper article describing the discovery of the treasure. Use your notes.
- Read your article to the class and discuss it with them.



Questions

- What treasure was found?
- Where and when was it found?
- Who found it?
- How did they find it?
- What did they do when they found it?
- Where is the treasure now?
- How much is it worth?

► Now go to **Extra reading A**

MODULE
3

What can you see? What do you use this equipment for?



Who is this famous scientist? What did she discover?



What type of science is shown in this picture? What other types of science are there?

Science

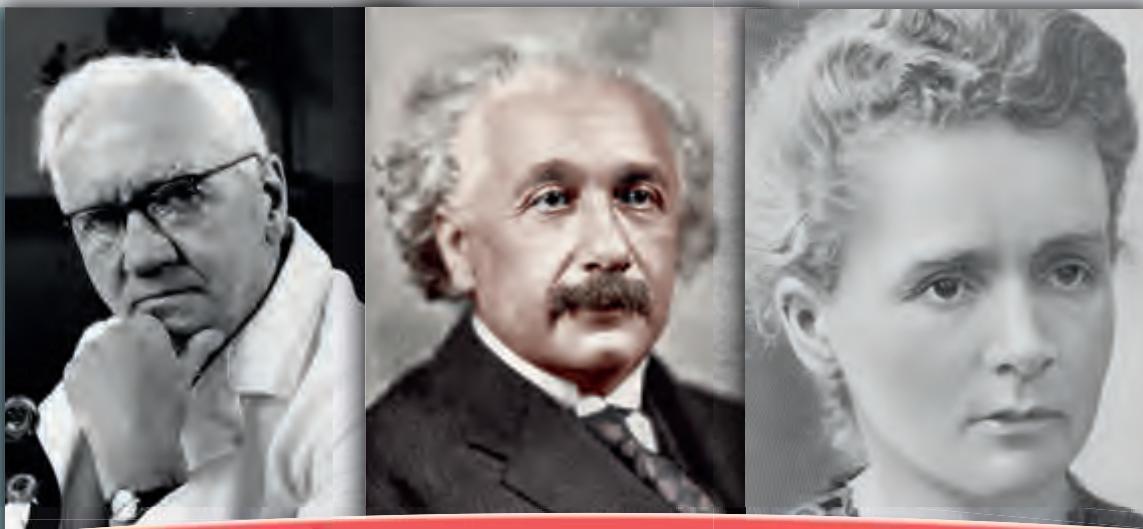
Outcomes

- To read about famous scientists, the Nobel Prize, scientific experiments and universities in Jordan
- To listen to an interview about Alfred Nobel and fields of science
- To use vocabulary related to Nobel Prizes and science
- To talk about annoying habits, Nobel Prizes, science and experiments
- To use the Present Continuous and state and dynamic verbs
- To write about a Nobel Prize winner, a school project, a paraphrase of an article and an experiment
- To edit written work for spelling, punctuation and clarity of ideas

Project

Write about a Nobel Prize winner.

Unit 3



The Nobel Prize

Grammar

the Present Continuous

BEFORE YOU BEGIN

- 1 Who are the scientists in the photographs? What are they famous for?
- 2 Read the words in the box. Which can refer to Nobel Prizes? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

Nobel Prize Medicine Physics Chemistry
Economic Sciences Literature Peace DNA

- 3 Read and listen to the article about famous scientists.
What famous scientists do you know? Make a list and discuss it in pairs.

Super scientists

In the last thousand years, science has made much progress. In the past, Arab scientists like Abbas Ibn Firnas and Al Zahrawi made several important discoveries. These great people of the past had a huge influence on different fields of human knowledge. **Their** work has changed our daily lives today. Nowadays, science is an international subject. In 1901 CE, a Swedish scientist called Alfred Nobel founded the Nobel Prize. Since then, there have been six Nobel Prizes every year. **They** are for Medicine, Physics, Chemistry, Economic Sciences, Literature and Peace. Since 1901 CE, there have been more than 700 Nobel Prize winners.

Marie Curie was a Polish scientist. She was the first woman to win a Nobel Prize.

In fact, she was the winner of two Nobel Prizes – for Physics in 1903 CE and for Chemistry in 1911 CE. **Her** great discovery was radium.

In 1921 CE, the German scientist Albert Einstein received the Nobel Prize for Physics. He did important research into light and how **it** travels.

The Scottish doctor Sir Alexander Fleming won the Nobel Prize for Medicine in 1945 CE. In 1929 CE, Fleming discovered penicillin, which is a very important medicine today.

In 1962 CE, British and American scientists Francis Crick and James Watson won the Nobel Prize for Medicine. Together, they found out more about DNA. It is DNA that makes each of us different!

COMPREHENSION

4  Read and listen to the article again and answer the questions.

- 1 What do the words in **bold** refer to?
- 2 How did science develop throughout the years? Name the major discoveries and findings mentioned in the text.
- 3 Which of the discoveries and findings mentioned in the text do you think is the most important? Justify your answer.
- 4 In your opinion, what's the importance of giving a Nobel Prize for Peace?
- 5 If you were to add a Nobel Prize for another field, what would it be for? Explain your choice.



PRONUNCIATION

5  Listen to the words in the box. Notice the sound of the *a* in the words. Listen again and repeat. Then, in pairs, put the words in the correct columns in the table.

has past made and
last had change
Alexander James

have	day	are

GRAMMAR: The Present Continuous

6 Complete each statement or question in a logical way. Use the clues from the box to write sentences in the Present Continuous.

- 1 I can't answer the phone. I am baking a cake at the moment.
- 2 You look so tired! (you) _____?
- 3 I know why she is sad. Her best friend _____.
- 4 Don't turn off the computer! I _____.
- 5 What's that noise? (your dad) _____?

travel abroad in 2 hours
train for the marathon
do research on Chemistry
fix the broken chair
bake a cake

7 Complete the sentences using *always* and the Present Continuous form of the verbs in the box.

complain look get
talk tell

- 1 I don't like him very much. He is always talking about other people.
- 2 He's a very impatient person – he _____ at his watch.
- 3 I don't like fruit, but my mother _____ me to eat it.
- 4 The bus takes so long. I _____ home late.
- 5 Why don't you say something nice? You _____.

Speaking strategies

Preparing what to say

- Think about your family and friends. Take notes on what you can say. Prepare five sentences.
- Check any vocabulary that you don't know and you need in your dictionary before you begin.

SPEAKING

8 What are people always doing which annoys you? Work in pairs and tell each other, using *always* and the Present Continuous.

A: Sami and Nabil are *always arguing*.

B: My classmate is *always taking my pen without asking me first*.

Research box



More than 700 people have received Nobel Prizes. How many of these are women?

READING AND VOCABULARY

1 Complete this summary of the text on page 26 with the missing words from the box below.

Nobel Prizes winners scientist Physics became win

The Nobel Prizes began in 1901 CE, when Alfred Nobel, a Swedish (1) scientist, founded them. You can (2) _____ a Nobel Prize if your work is very important.

Each year, there are six (3) _____. People can win them for Medicine, (4) _____, Chemistry, Economic Sciences, Literature and Peace. Since the Nobel Prizes started, there have been more than 700 (5) _____.

Marie Curie discovered radium and she (6) _____ the first woman to receive a Nobel Prize, in 1903 CE. She also won a second Nobel Prize in 1911 CE.

SPEAKING

2 Can you remember? Work in pairs. Choose from each column to make sentences.

Marie Curie		1903 CE
Albert Einstein		1962 CE
Sir Alexander Fleming	Physics	1921 CE
Francis Crick and James Watson	Medicine	1945 CE
	Chemistry	1911 CE

Sir Alexander Fleming won the Nobel Prize for Medicine in 1945 CE.

LISTENING

3  What do you know about Alfred Nobel and the Nobel Prizes? Discuss with your partner. Then, listen to an interview with a student about Alfred Nobel and complete the table. Write complete sentences.

Alfred Nobel

Place of birth	
Year of birth	
Education	
Most significant invention	
Year of death	

4 Listen again and answer the questions. Use complete sentences.

- 1 What is Tareq's class doing a project on? *They're doing a project on the Nobel Prizes.*
- 2 What does Tareq's teacher say about Nobel Prizes?
- 3 Which area of science did Alfred Nobel first study?
- 4 What happened to Alfred's money when he died?
- 5 How do you think this project has affected Tareq's plans for the future?
- 6 Would you like to win a Nobel Prize one day? What for? Explain.

READING: The Nobel Prize conferences

5 Work in pairs. Do you know anything about the Nobel Prize conferences? Where have they been held?

6 Read the text, and check your answers to exercise 5.

In 2005 CE, His Majesty King Abdullah II Ibn Al Hussein started an important event. In Petra, Jordan, every year, many people who had won Nobel Prizes that year were invited to take part in a conference to talk about and try to solve the world's problems. Prize winners in all six disciplines were invited. His Majesty King Abdullah wanted to have the yearly event in Petra because of the city's history. The environment of Petra presented problems for the Nabatean people when they wanted to build a city. However, the people succeeded, and now the city has many visitors from all over the world.

10 There have been a number of conferences in Petra since 2005 CE. Famous Nobel Prize winners along with young people from Jordan and other countries in the Middle East talked about peace, medicine, science and culture. It has always been a wonderful and very special event!



7 Read the text again, and answer the questions.

- 1 Who started the event in Petra?
- 2 Why was the event held in Petra?
- 3 What happened at the conferences?
- 4 What world problem would you like to be solved the most?

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.

SPEAKING

8 Work in a group. Who would you award a Nobel Prize to, in what field and why? Write some notes and then discuss with your class.

WRITING

9 Write a short text about your chosen Nobel Prize winner and why you are awarding them the prize.

*I never see what has been done;
I only see what remains to be done.*

Marie Curie, scientist
(1867 CE–1934 CE)





VOCABULARY: Science

1 The words in bold are in the wrong sentences. Put them in the correct place.

1 Radium is one of the major **research** that Marie Curie made. _____

2 A scientist uses a **hypothesis** to look at very small objects that are invisible to the human eye. _____

3 I conducted **findings** into the importance of science in our daily lives. _____

4 A flask and a beaker are **report** used by scientists. _____

5 The teacher admired the informative **equipment** his student wrote about the history of the Nobel prize. _____

6 Einstein made a **microscope** about how light is transmitted before he did an experiment to test it. _____

READING

2 Read Robert's letter. What does he want help with?
3 Read Robert's father's reply. Did he answer Robert's question? How?



Robert

Dear Dad,
I'm doing an interesting science project at school at the moment. Can you help me? For instance, what do scientists do when they carry out experiments?
Love,
Robert

Dear Robert,
I'm delighted that you are showing interest in my work as a scientist! At the moment I am working on an important project. There's a lot of very useful equipment here, and I am using this equipment to carry out my experiments. For example, there's a huge microscope in the laboratory, which is helping me with my research.

When scientists carry out an experiment, they first decide what to investigate. They ask a question about why something is happening and try to think of a possible answer. This possible answer is called a hypothesis. Scientists then carry out experiments to test their hypothesis. They observe the results and, if necessary, they change their hypothesis. Finally, scientists write a report about what they have found out. This is how they share their findings with other scientists.

I'm only working here for two more weeks. Then I'm coming home!

With love,
15 Dad

4 Read Robert's father's letter again and order the events.

- a** He writes a report.
- b** He observes the results.
- c** Then, he carries out experiments to test the hypothesis.
- d** The scientist decides what to investigate. **1**
- e** He might change his hypothesis.
- f** He creates a hypothesis.



GRAMMAR: The Present Continuous

5 Use clues from the letter on page 30 to describe what the people are doing in each picture.



SPEAKING

6 In pairs, ask and answer questions about the pictures in exercise 5.

A: Are you writing a report?

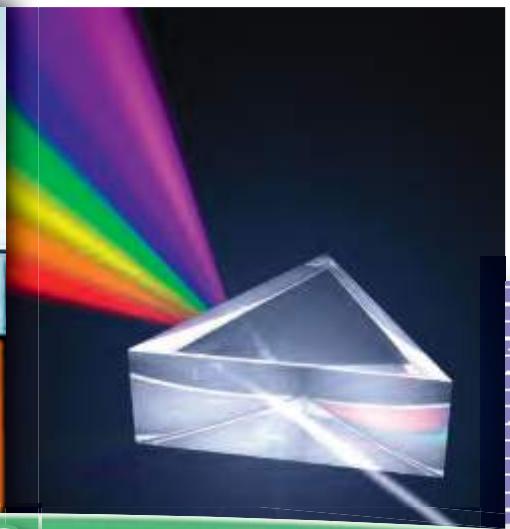
B: No, I'm not. I'm observing the results. Are you writing a report?

A: Yes, I am.

WRITING

7 Write a letter to a relative about a school project you are working on at the moment. Tell them what you are learning about and how you are doing the work. Then, edit your work for spelling, punctuation and clarity of ideas.

Unit 4



Science and scientists

Grammar

state and dynamic verbs

BEFORE YOU BEGIN

- 1 Look at the pictures and say what you can see in each one. What is the word for the type of science subjects shown in each picture?
- 2 Read the words in the box. Which words refer to types of science? What areas are covered in these types of science? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

organism botany zoology ecology environmental science
combine branch interact cell

- 3 Read and listen to Part 1 of an extract from a science radio programme. Write down the questions that you hear about the three main areas of science.

Science matters

Do you like science? Whatever you think of science, there is no doubt that it can be very surprising.

Science tries to answer many of the questions that we like to ask about the world around us. Do you know, for example, that lightning is ten times hotter than the Sun? Or that a

5 hundred million micro-organisms live in your mouth?

The three main areas of science are Biology, Chemistry and Physics. Biology is the study of living things. It includes the fields of botany, zoology, ecology and environmental science. Chemistry is the study of the building blocks of nature and how **they** combine to form the solids, liquids and gases that make up everything. Physics is the branch of

10 science that deals with matter and energy and how **they** interact.

Science tries to answer questions such as: Why do we see lightning before we hear thunder? Why do we need to breathe in more air during exercise? What do oil and coal come from?

4 Discuss the questions you have written down in exercise 3 with a partner and try to answer them.

5  Read and listen to Part 2 and check your answers.

15 Physicists have shown us that light travels faster than sound. **It** is the fastest thing we know. Biologists explain that when we do exercise, the cells in our body need more oxygen. Chemists have found that oil and coal come from plants and animals that lived millions of years ago.

COMPREHENSION

6  Read and listen to the texts again and answer the questions.

- 1 What do the pronouns in **bold** refer to?
- 2 What's the importance of science?
- 3 Why are ecology, botany and zoology considered branches of Biology? Explain.
- 4 If you want to know about how plants grow, which branch of science can be helpful? Explain.
- 5 In your opinion, what is the most important question that scientists were able to answer? Explain your choice.
- 6 What other questions do you think scientists should answer?

GRAMMAR: State and dynamic verbs

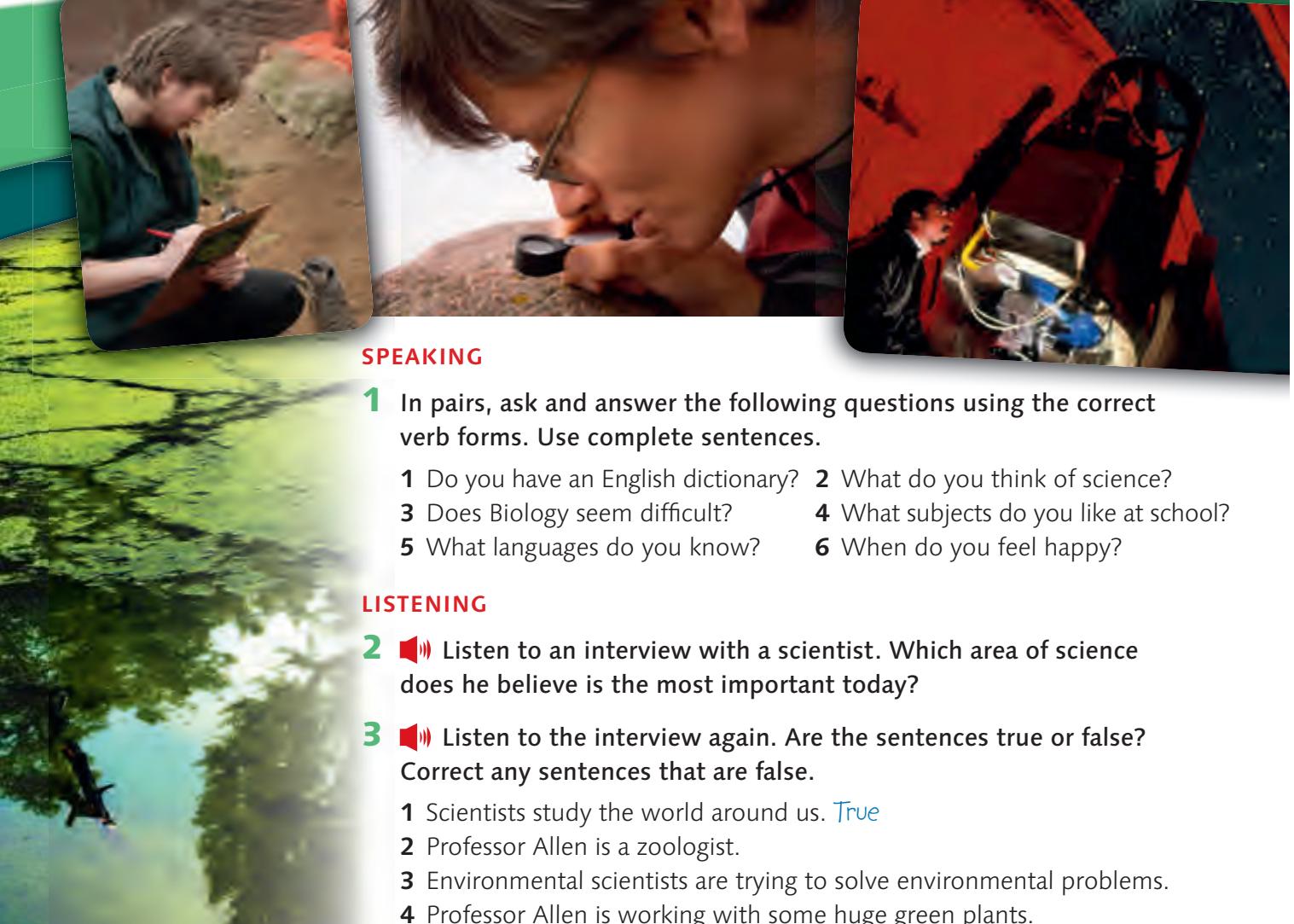
7 Read the sentences and circle the correct tense.

- 1 Science answers many questions we **are liking / like** to ask.
- 2 **Do you know / Are you knowing** that lightning is hotter than the Sun?
- 3 We **are seeing / see** lightning before we hear thunder.
- 4 At the moment, we **are doing / do** an exercise.

8 Some of the following sentences are wrong. Put a tick next to the correct sentences, and correct the wrong sentences in your notebook.

- 1 I'm not sure they're knowing Samer.
- 2 Zeina forgot to turn the lights off before she left the office.
- 3 Do you know that our bodies are needing more oxygen when we do exercise?
- 4 Kareem is fixing his brother's bike at the moment.
- 5 He is wanting to be an archaeologist and discover hidden treasures.
- 6 I am not liking extreme sports because they are dangerous.
- 7 Scientists believe that if we save energy, we protect the environment.





SPEAKING

1 In pairs, ask and answer the following questions using the correct verb forms. Use complete sentences.

- 1 Do you have an English dictionary? 2 What do you think of science?
- 3 Does Biology seem difficult? 4 What subjects do you like at school?
- 5 What languages do you know? 6 When do you feel happy?

LISTENING

2 Listen to an interview with a scientist. Which area of science does he believe is the most important today?

3 Listen to the interview again. Are the sentences true or false? Correct any sentences that are false.

- 1 Scientists study the world around us. **True**
- 2 Professor Allen is a zoologist.
- 3 Environmental scientists are trying to solve environmental problems.
- 4 Professor Allen is working with some huge green plants.
- 5 These plants produce flowers when they grow.
- 6 Scientists think that their research is important for cars in the future.

4 Complete the summary about the interview using the Present Simple or the Present Continuous form of the verbs in the box.

live carry out produce think be react work grow

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.
Albert Einstein,
Scientist
(1879 CE–1955 CE)

Professor Allen (1) is an environmental scientist. He (2) _____ on a research project with tiny green plants. These tiny plants (3) _____ in rivers and in the sea and they (4) _____ to sunlight. The scientists (5) _____ experiments with these plants. They (6) _____ them in huge numbers. When the plants grow, they (7) _____ a liquid. Scientists (8) _____ that cars can use this liquid in the future.

SPEAKING

5 Do you think that science is exciting? Which area of science do you think is the most important? Discuss with your partner. Give reasons.

A: I think that science is exciting because you can have surprising results when you do experiments.

B: I think that Medicine is the most important area of science because it helps people when they are ill.

VOCABULARY: Science and scientists

6 Complete the sentences using the correct nouns or sentences.

1 I enjoy studying animals and their different characteristics.

I want to be a(n) _____.

2 I like _____.

I want to be a meteorologist.

3 I love studying and reading about different kinds of rocks and stones.

I want to be a(n) _____.

4 I am interested in _____.

I want to be a botanist.

5 I enjoy observing stars and studying everything outside Earth's atmosphere.

I want to be a(n) _____.

6 I like _____.

I want to be an ecologist.



SPEAKING

7 Work in pairs. Take it in turns to say what you are working on.

Your partner says what kind of scientist you are.

A: I am carrying out research into what whales eat.

B: I think you are a zoologist.



READING

8 Read about a famous scientist. What did he discover?

Ibn Al Haitham was a brilliant scientist who wrote many papers on Physics, Astronomy and Mathematics. He was born in the year 965 CE and died in 1039 CE.

He carried out experiments with light, and the results of which were written down and became his famous book, the *Book of Optics*. The science we now know as 'optics' was born.

Ancient Greek scholars had tried to explain how human beings see, but they had not done any experiments to prove their hypotheses. Ibn Al Haitham was able to prove for the first time in his experiments that people can see because light reflects off things around us and into the eye.

Ibn Al Haitham also developed the first camera obscura. In a dark room of his house, he allowed light to come into the room through a tiny hole, and an upside-down picture of the scene outside appeared on the wall opposite. This experiment established the knowledge on which the first cameras were made.

COMPREHENSION

9 Read the text again and answer the questions.

1 What is the book that Ibn Al Haitham wrote called? Why do you think he wrote it?

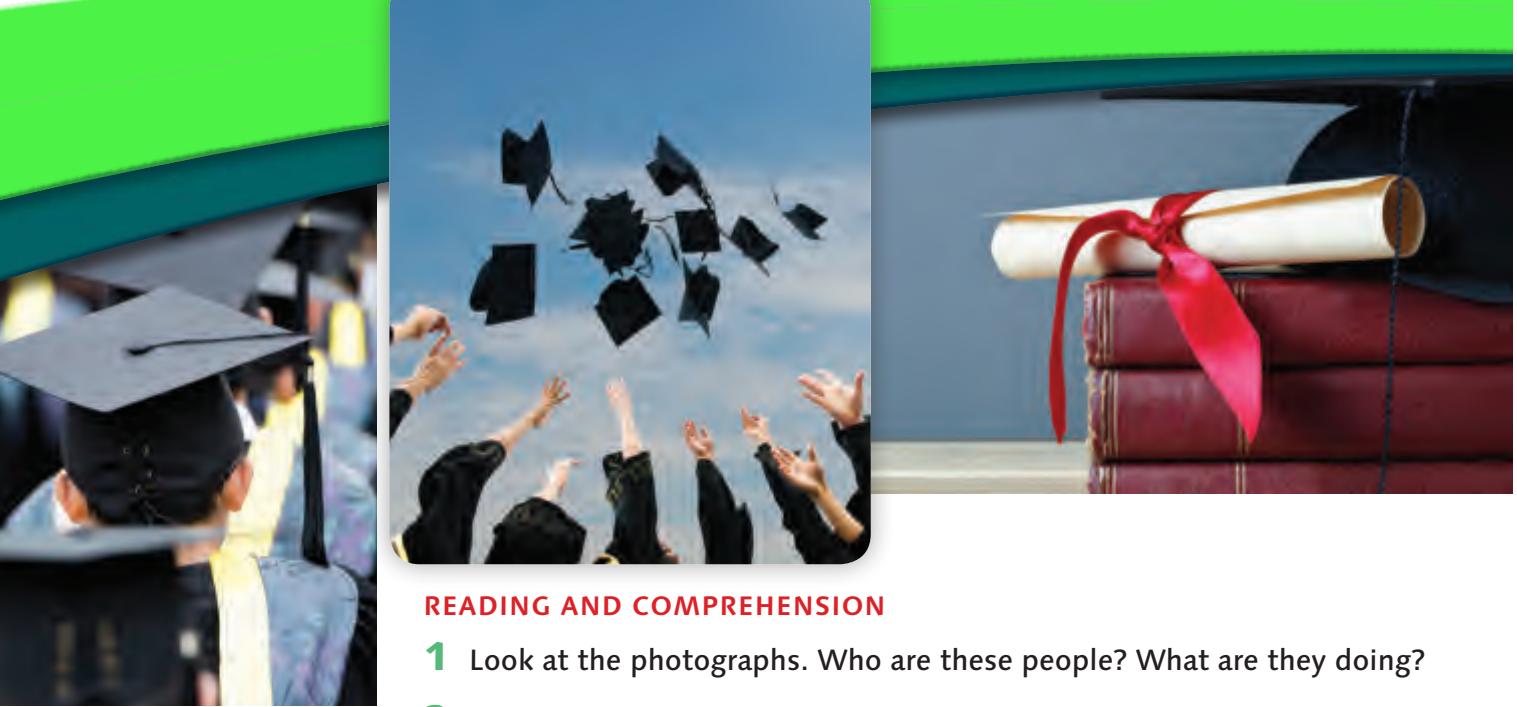
2 What is the name of the science that he discovered?

3 How was Ibn Al Haitham different from Ancient Greek scholars?

4 What did Ibn Al Haitham discover about the scene behind the camera?

Research box

Who invented the digital camera, and when?



READING AND COMPREHENSION

- 1 Look at the photographs. Who are these people? What are they doing?
- 2 Read the words in the box. Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary. Then, write sentences using these words.
higher education vision distinguished witness priority
- 3 Read the article. How objective is the speaker? Explain.

JORDAN, A PIONEER IN HIGHER EDUCATION

Jordan has some of the best universities in the Middle East, both public and private. In the last two decades, and during the reign of His Majesty King Abdullah II, ⁵ the sector of higher education in Jordan witnessed significant progress.

His Majesty King Abdullah II had a vision to transform Jordan into a leading country in the global economy, and so he placed ¹⁰ higher education within the priorities of the country.

In 2007 CE, His Majesty King Abdullah II established the Scientific Research Support Fund for encouraging and supporting

¹⁵ scientific research in the kingdom. The SRSF helps distinguished students through offering scholarships and supporting their higher education research programmes.

During his Majesty's reign, many public ²⁰ and private universities were established. There are some 236,000 students studying in Jordan's universities, including 28,000 foreign students from all over the world. Jordan has one of the best standards of ²⁵ education in the Arab region, and, without a doubt, a pioneer in higher education.

- 4 Read the article again and answer the questions.

- 1 What is the main idea of the text?
- 2 Why is Jordan considered a pioneer in higher education?
- 3 In your opinion, why do foreign students come to study in Jordan?
- 4 Discuss how higher education progressed during the reign of His Majesty King Abdullah II.
- 5 Give suggestions about how higher education could be developed further in Jordan.

PRONUNCIATION

5 Can you say this proverb? Use the pronunciation table in your **Activity Book Glossary** to help you.

/ə tʃaɪld wɪðaut edʒəkeɪʃən ɪz laɪk ə bɜ:d wɪðaut wiŋz/

What do you think this proverb means? Translate it into Arabic, then in pairs compare your answers.

SPEAKING

6 What would you like to study at university? Discuss with a partner.

WRITING

7 Paraphrase the first two paragraphs in the article on page 36. Then share your work with the class.

READING

8 The way humans react is fascinating, and it is a growing area of scientific research. Read the instructions for this experiment. Then work in pairs and carry it out. Make notes about your findings.

Experiment – How fast do you react?

1. Ask a partner to hold up a ruler. His or her hand should be at the top. Put your hand close to the zero mark at the bottom. Don't touch the ruler!
2. Ask your partner to drop the ruler suddenly. Try to catch it.
3. Look where your hand is on the ruler. Write down the number next to your hand. It shows how far the ruler has fallen.
4. Repeat the experiment three more times. Can you catch the ruler faster each time? Look at the numbers you write down to find out.

WRITING

9 Read *What's happening?* below. Use this information and your notes from exercise 8 to write a short report about your experiment. Then share your work with the class.

What's happening?

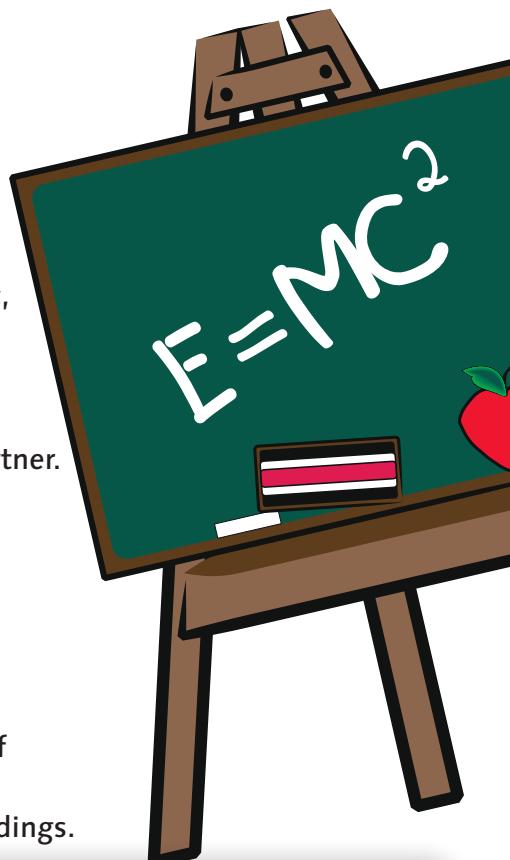
EXPERIMENT – HOW FAST DO YOU REACT?

You catch the ruler when a message travels from your eyes to your hand. It takes a short time for this to happen. You can catch the ruler faster with practice, but the message always needs time to travel.

Writing strategies

Writing a report

- Your report should tell the reader what happened in the experiment and what the experiment showed.
- Use the information in exercise 8, but try not to copy. Use your own words. Use short, simple sentences.

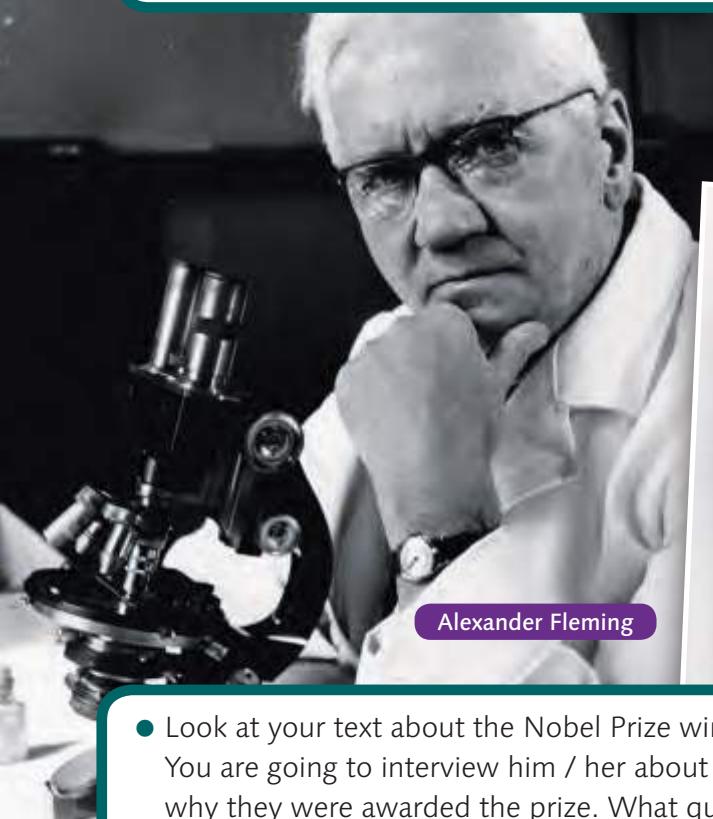


Project

Write about a Nobel Prize winner.

Your task

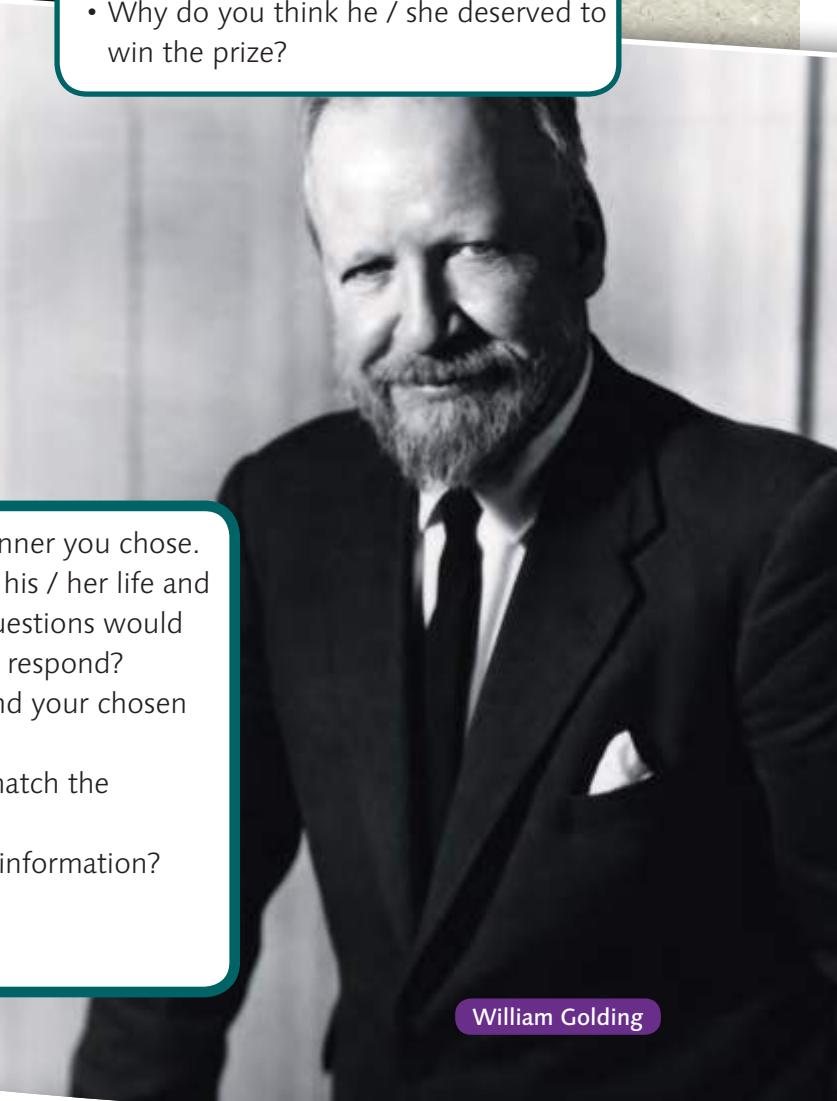
- Choose a winner of a Nobel Prize and find out some information about him / her.
- Find out the answers to the questions. Use books, the Internet, the school library or a public library.
- Write a short text of about one hundred words about the winner.
- Illustrate your project with photographs or pictures from magazines, etc.
- Present your project to the class.



Alexander Fleming

Questions

- When did he / she live?
- Which Nobel Prize did he / she win?
- What was his / her achievement?
- Why do you think he / she deserved to win the prize?



William Golding

- Look at your text about the Nobel Prize winner you chose. You are going to interview him / her about his / her life and why they were awarded the prize. What questions would you ask? How do you think he / she would respond?
- In pairs, write an interview between you and your chosen winner.
 - Does the information in your interview match the information you researched?
 - Are your questions useful for finding out information?
 - Will this be interesting for a listener?
- Now present your interview in groups.

Revision A

1  Listen to the exercise. What kind of text is it?
Tick the information that you hear.

You must...	be a successful business man already.	want to share your business ideas.	know a lot about saving the environment.
<i>The Business is...</i>	a company.	a new TV show.	a newspaper article.
You will have to...	do market research.	use money well.	have an interview.
You should...	design a website.	apply immediately.	call the show's hotline.

2 Write a letter to your best friend, describing a recent visit to your favourite museum. Describe the museum, as well as the time you spent there.

3 Think of someone you know. What annoying habits do they have? Tell each other in pairs, using the Present Continuous.

My colleague is always talking on the phone in a loud voice!

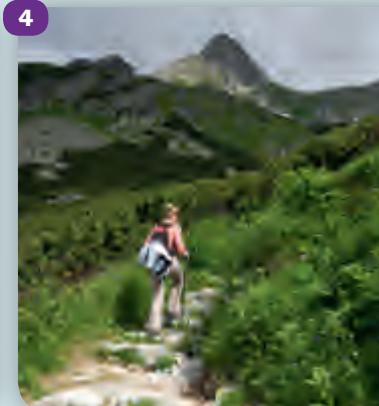
4 Work in pairs. Take turns to mime an action, and guess what your partner is doing.

A: Are you swimming?

B: No, I'm not. I'm paddling a kayak!



5 Work in pairs. Talk about the pictures using the Present Perfect with *yet* and *already*.



She has baked a cake. She hasn't cut it yet. She's already turned the oven off.

6 Write a short descriptive text about the profession of your choice and your reasons for choosing it.

7 Choose a famous person and imagine you are that person. Describe yourself so that your partner can try to guess who you are. Use any of the verbs in the box.

like know hate enjoy think hope go work speak want wear have

A: I like playing tennis. I'm training for the US Open Tennis Championships now. I hope to win. I speak Spanish and English, but at the moment I'm practising English because I'm going to the USA soon.

B: You're Rafael Nadal.

A: Yes, I am.

8 Play 'What's my job?'. Work in pairs. Think of a job, and give your partner hints about it. Take turns to guess each other's jobs. Use the words in the box.

can't could might must

A: I travel by aeroplane.

B: You could be a flight attendant.

A: No, I'm not. I sit in the cockpit.

B: You must be a pilot.

A: Yes, I am!

MODULE
4

Where is this river? What journey is this man making?



Journeys

Outcomes

- To read about the polar regions, sea turtles and a great journey
- To listen to information about polar bears and penguins, information about diving in Aqaba, a holiday plan and a description of a tour in Wadi Rum
- To use vocabulary related to the polar regions, polar animals, marine life, geographical features and tours
- To talk about visiting the North and South Poles, to make suggestions and plans, to choose items to take on a trip
- To use the Second Conditional, *will / won't*, and to make suggestions using *Shall, Let's ..., How / What about, Why don't we ...*
- To write about a visit to the Red Sea, a marine animal, the Amazon River and a memorable journey
- To revise written work for clarity of ideas and coherence

Where is this place in the world?
Would you like to visit this place?
Why/Why not?



Where in the world is this train travelling through?
Which countries use trains for people to travel? Name a few of them.

Project
Write about a country.

Unit 5

Exploring wildlife



Grammar

the Second Conditional

BEFORE YOU BEGIN

- 1 Look at the photographs. What do you think helps these animals live in polar regions?
- 2 Which of these words refer to animals? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

snowstorm iceberg boat trip wildlife seal sole nostril
polar ice floe webbed
- 3 Listen and read about polar bears and penguins. What do you know about these animals? Discuss in pairs.

Listening strategies

Scientific article

- Listen carefully and read along with the text.
- Don't worry if you don't understand every word – just listen and see how these new words are written and pronounced.
- As you listen, look at the text and underline any important information you come across.

Not many people have the chance to visit the North and South Poles. However, if you had the opportunity to visit the Poles, they would appear similar – both are places of extreme cold. If you went **there** in winter, you would probably experience severe snowstorms. However, both are also places of spectacular beauty, with their frozen landscapes of snow, ice and icebergs. If you went on a special adventure boat trip when you visited, you would be able to observe the unique wildlife of these places, like polar bears, penguins and seals. You would be unlucky if you didn't see any seals.

The polar bear lives in the cold, snowy Arctic lands in the North Pole. It has a thick layer of fat underneath its skin and this helps to keep it warm. It also has a thick layer of fur all over **its** body,

including the soles of its feet, which allows it to swim in the coldest seas without feeling the cold. Beneath the fur the skin is black, so it absorbs heat. Polar bears are excellent swimmers. Their nostrils can close so they can swim underwater and between the ice floes to look for seals, **their** favourite food.

Unlike polar bears, penguins live in Antarctica. Penguins keep warm with thick skin and lots of fat under the skin. Penguins have dark coloured feathers on their back, which absorb heat from the sun to keep **them** warm. Like polar bears, penguins are excellent swimmers. **They** have webbed feet and streamlined bodies for powerful and fast swimming. They have different diets, but in general, they all eat a variety of small fish.

COMPREHENSION

4  Read and listen to the text again, then answer the following questions.

- 1 Identify the purpose of the author in the text (to inform, to compare and contrast, etc.) Explain.
- 2 What makes the Polar region a good place to visit? Explain.
- 3 What do polar bears and penguins have in common that help them survive such weather?
- 4 What do the words in **bold** refer to?
- 5 What other title would you suggest for the text? Justify your answer.
- 6 In your opinion, are polar bears and penguins in danger? Why/Why not?



PRONUNCIATION

5  Listen to the title of the text on page 42. What are the initial sounds of the main words? Find in the text words with similar sounds and fill in the table.

Which of the words you found has the two sounds?

bear	penguin

GRAMMAR: The Second Conditional

6 Complete the Second Conditional sentences with the correct form of the verbs in brackets.

- 1 If you went (go) to the Poles, you would see a lot of snow and ice.
- 2 If I see (see) a polar bear, I'd take a lot of photographs.
- 3 If you visit (visit) the North Pole, you wouldn't see any penguins.
- 4 If I travel (travel) to the Arctic in winter, I would experience severe snowstorms.
- 5 If I win (win) a lot of money, I'd go on an Arctic boat trip.

7 What would you do in these situations? Write sentences using the Second Conditional.

- 1 You get lost in the city. *If I got lost in the city, I would ask someone to tell me the way.*
- 2 You find a valuable item on the street.
- 3 Your best friend moves to another country.
- 4 You have a problem with your studies.
- 5 You see fire in the opposite building.
- 6 You find a cat with a broken leg in the garden.

SPEAKING

8 If you went to the North or the South Pole, what would you see or do? Make notes. Then, in pairs, tell your partner.

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



We must always remember with gratitude and admiration the first sailors who steered their vessels through storms and mists, and increased our knowledge of the lands of ice.

Roald Amundsen, polar explorer (1872 CE–1928 CE)



READING

1 Read the brochure about Antarctica to find out what happens there in the summer. Would you consider visiting Antarctica? Explain.

A TRIP TO ANTARCTICA

Do you know a place where it is day for six months of the year? Do you also know where ice and weather, not clocks and calendars, determine when and where people travel?

If you visit Antarctica on one of our adventure trips, you'll discover a continent that has incredible beauty. Antarctica is the southern continent and is surrounded by the Atlantic, Pacific and Indian Oceans.

If you come on one of our fascinating trips, your adventure will begin with a ⁵ flight to Argentina. From there, you will travel with our guide to Ushuaia, the most southerly city in the world, and join our special ship.

On the way to the South Pole, our ship passes through amazing scenery. If you go on deck, you will see huge icebergs, as well as whales, seals and many different sea birds. Our team of experts will be there to help you if you have ¹⁰ any questions.

Passengers go on trips every day if it's sunny. One of our most popular trips is to Half Moon Island. Passengers can also spend an afternoon at the boiling hot springs of Deception Island.

¹⁵ There is a lot of time to enjoy your trip because it's light for twenty-four hours a day during the summer in the Antarctic. A boat trip to Antarctica is an unforgettable experience.

Please remember:

- Our boat trips are from November to February. (We don't take passengers to Antarctica unless it is summer there.)
- You need warm clothes if you come!
- Don't get too close to the wildlife: some animals attack if you come near them.
- There are no banks in Antarctica. If you want to buy something, you'll need some money.
- If you book before 1st September, you'll get a free visit to the Amundsen-Scott research base.



COMPREHENSION

2 Read the brochure again and complete the following table with the information from the text. Use full sentences.

Antarctica	
Location	
Weather	
Day and night cycle	
Boat trips	
Wildlife	

READING

3 Complete Jameel's email with the correct words from the box.

boat trip shrimps snowstorms sea turtles frozen wildlife

Dear Fadi,

I'm having the most incredible time in Aqaba on board the ship sailing across the Red Sea. The ship stops every 6 hours so we can dive into water. I've seen some amazing scenery: lovely coral reefs, gentle water currents and many multicoloured fish. It's really beautiful. There is a lot of incredible (1) _____ to observe. If you look carefully, you will see marine creatures of all sizes. You see tiny fish such as (2) _____, and big creatures such as (3) _____. Did you know that sea turtles are found in all oceans except in the Arctic? That is because they cannot survive in (4) _____ water, blizzards and (5) _____. If they travel to cold regions, they will die. That is why they only live in warm waters. So I guess you did not spot any during your Arctic (6) _____. You would love it if you were on this boat trip.

Best wishes,
Jameel

GRAMMAR: The Second Conditional

4 Complete the Second Conditional sentences with the correct form of the verbs in brackets.

- 1 If I visited (visit) Antarctica in winter, I think it would be a bad idea.
- 2 If you _____ (go) on a trip to Wadi Rum, you'd enjoy it.
- 3 If we _____ (not see) any penguins in the South Pole, I would be very surprised.
- 4 If sea turtles _____ (live) in cold water, they would die.
- 5 Would you go diving in the Red Sea if you _____ (get) the chance?



SPEAKING

5 Imagine you are thinking about going on a boat trip to Antarctica, and you are asking Fadi what it would be like before you decide to go. In groups, ask and answer the questions. Use the text in exercise 1 to help you.

- 1 If I went on deck, what scenery would there be?
- 2 What animals would I see?
- 3 What would I do if it was sunny?
- 4 Would I need warm clothes?
- 5 Would I see any polar bears?

A: If I went on deck, what scenery would there be?
B: There would be huge icebergs.

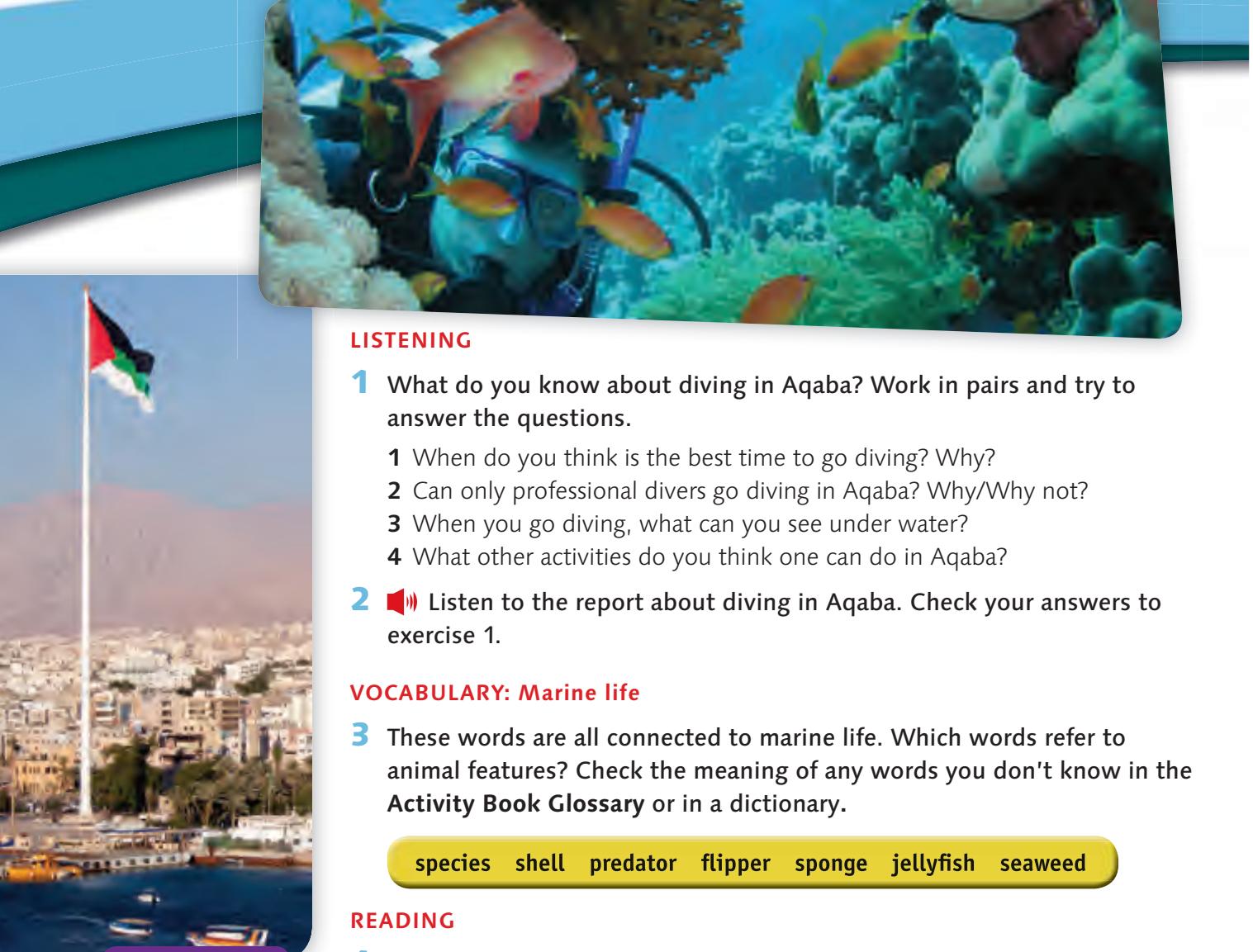
WRITING

6 Imagine you are visiting the Red Sea. Write an email to a friend describing your visit. What scenery and marine life can you see?

Research box



How old is the Red Sea?



LISTENING

1 What do you know about diving in Aqaba? Work in pairs and try to answer the questions.

- 1 When do you think is the best time to go diving? Why?
- 2 Can only professional divers go diving in Aqaba? Why/Why not?
- 3 When you go diving, what can you see under water?
- 4 What other activities do you think one can do in Aqaba?

2 Listen to the report about diving in Aqaba. Check your answers to exercise 1.

VOCABULARY: Marine life

3 These words are all connected to marine life. Which words refer to animal features? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

species shell predator flipper sponge jellyfish seaweed

READING

4 Read the following text about sea turtles. What kind of environment do you think sea turtles need to survive?

Sea turtles are among the most ancient creatures in the world. There are seven species of sea turtles that can be found today and they are found in all waters that are warm. Since the Red Sea's water in Aqaba is constantly warm, it is considered to be the place where sea turtles travel in search of food. All sea turtles have hard shells that protect them from predators. Their shells are also streamlined to help them swim through the water more easily and faster. Their colour differs depending on the species; they could be yellow, green or black. Unlike other turtles, sea turtles cannot hide their legs and head inside their shells because they have flippers that direct them smoothly while swimming. Those flippers are also built for digging in the sand. Most sea turtles eat small sea animals, such as sponges, jellyfish, snails and shrimps. Other sea turtles feed on sea plants and grasses, such as seaweed. Surprisingly, sea turtles can live up to 80 years and can weigh up to 200 kilograms!

5 Read again and complete the table below.

Living conditions	Adaptation to its environment	Food
warm waters		

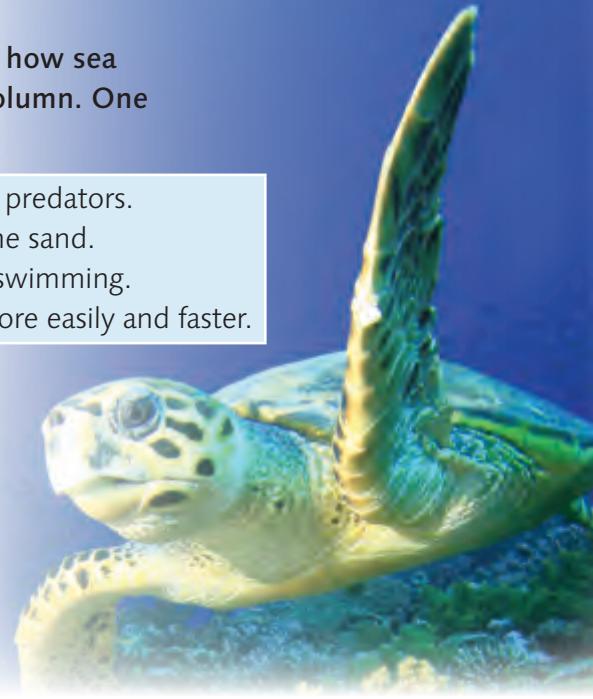
COMPREHENSION

6 Read the text in exercise 4 again. Write sentences about how sea turtles are adapted to their habitat. Choose from each column. One of the sentences in the first column is used twice.

- 1 They have flippers
- 2 They have streamlined shells
- 3 They have hard shells

- to protect them from predators.
- to help them dig in the sand.
- to direct them while swimming.
- to help them swim more easily and faster.

They have flippers to help them dig in the sand.



PRONUNCIATION

7 Listen and repeat. Practise the intonation.

- 1 If I won a lot of money, I'd go on a Red Sea boat trip.
- 2 If I went diving in Aqaba, I'd see sea turtles.

SPEAKING

8 Roleplay an interview with your partner. Take turns to ask and answer the following questions. Take notes. What would you do if ...

- you won a lot of money?
- you travelled to Aqaba?
- you spoke many foreign languages?
- you lived anywhere else in the world?

- you saw a famous person?
- you invented something very important?
- you played a musical instrument very well?

A: What would you do if you won a lot of money?
B: If I won a lot of money, I would give it to charity.

9 Tell the class about some of the answers you and your partner gave. You can use your notes from exercise 8.

If Ali won a lot of money, he would give it to charity. I would do the same, and I would also give some money to my family.

WRITING

10 Choose a marine animal. Do research about it. Consider the following to write a report about it .

- 1 Where does it live and what is it like there?
- 2 How is its body adapted to the living conditions?
- 3 What food does it eat? Does it hunt other animals?



SPEAKING

11 In groups, make an e-presentation about the marine animal you chose in exercise 10.

Unit 6

Planning a trip



BEFORE YOU BEGIN

Grammar

making suggestions: *shall, Let's ..., How / What about ..., Why don't we ...; will / won't and shall*

- 1 What would your ideal holiday be? Discuss with a partner.
- 2 Read and listen to Mr and Mrs Husseini discussing their family holiday plans with their daughter Dalia. What kind of holiday are they planning and in which country?

Where shall we go?

Mrs Husseini: So, where shall we go on holiday this year?

Dalia: We went to Australia two years ago. Why don't **we** visit somewhere ⁵ different this year?

Mrs Husseini: You're right. How about going to Canada? Do you think it's a good idea?

Dalia: That's a great idea!

¹⁰ **Mr Husseini:** I'll check online if there are any trips to Canada. Oh here, there's a train journey in the Canadian Rockies.

Dalia: It looks fantastic.

¹⁵ **Mr Husseini:** Listen: See the natural wonders of Western Canada. Your journey will begin in Vancouver in British Columbia. From **there**, you will travel

through the Coastal Mountain Range and Fraser Canyon with its dramatic ²⁰ landscape. You will follow the Fraser River, famous for **its** salmon fishing. You will pass by the Albreda Glacier and the magnificent Pyramid Falls. The highlight of your journey will be Mount Robson, ²⁵ the highest peak in the Canadian Rockies.

Mrs Husseini: I really like the sound of that. Let's book the holiday.

³⁰ **Dalia:** I'll book the train tickets then. I think I'll book them online. It will be cheaper.

Mrs Husseini: Shall I check the flights to Canada? We'll have to fly to Vancouver to get the train.

³⁵ **Dalia:** Then I'll start packing!

COMPREHENSION

3 Read and listen to the text again and answer the questions.

- 1 Why doesn't Dalia want to go to Australia?
- 2 What do the words in **bold** refer to?
- 3 What is special about Mount Robson?
- 4 Do you think the family will have an exciting holiday? Why/Why not?
- 5 What would you change in this planned holiday to make it better? Explain.

PRONUNCIATION

4 Listen to the questions from the text. To which questions can the answer be *yes* or *no*?

- 1 So, where shall we go on holiday this year?
- 2 How about going to Canada?
- 3 Do you think it's a good idea?
- 4 Shall I check the flights to Canada?

Listen again. Which questions go up in pitch at the end? Repeat.

GRAMMAR: Making suggestions

5 Choose the correct answer.

- 1 Shall we *to go* / *go* / *going* to Canada this year?
- 2 Why *don't we* *to* / *don't we* / *don't* visit somewhere different?
- 3 Shall I *to read* / *reading* / *read* it to you?
- 4 How about *to go* / *go* / *going* on a train journey?
- 5 Let's *book* / *to book* / *booking* the tickets today.

6 Complete each suggestion with *Shall we* or *How about*.

- 1 How about going on holiday to Aqaba?
- 2 _____ go to the theatre this evening?
- 3 _____ take the train?
- 4 _____ driving to Spain?
- 5 _____ go sightseeing in London?

SPEAKING

7 In pairs, make dialogues with these phrases.

- 1 (go) on safari in Kenya
- 2 (go) surfing in Australia
- 3 (go) mountain climbing in Switzerland
- 4 (go) skiing in Lebanon
- 5 (go) sightseeing in London
- 6 (go) camping in Wadi Rum

A: *How about going on safari in Kenya?*

B: *That's a great idea.*

How about ...? Why don't we ...?

Shall we ...? Let's ...

That's a great idea! I'd love to!



Research box

Canada is the second largest country in the world but it only has one half of one per cent of the world's population. What is Canada's population today?



1

VOCABULARY: Geographical features

1 Match the pictures with the words from the box.

waterfall glacier plain canyon

1 plain



3

4



2



2 Read and complete the first part of Dalia Husseini's email about her trip to the Canadian Rockies with the words from the box.

waterfall scenery route journey mountain range highlight

Dear Rana,

I've been here for two days now and I have seen some wonderful (1) scenery. I'm on a train called *The Rocky Express* with my family. We're crossing the Rockies, the spectacular (2) _____ in the west of Canada. We're following the (3) _____ of the Fraser River and my dad has been able to go salmon fishing there. The (4) _____ of the (5) _____ for me so far though has been the (6) _____ called Pyramid Falls. It is spectacular!

GRAMMAR: will / won't and shall

3 Read and complete the second part of Dalia's email. Use the verbs in the box with the future form *will / won't* or *shall* for suggestions. Check the meaning of any words in the box you don't know.

stay see meet not have not believe hire call

Tomorrow we (1) will see the Albreda Glacier. Then it's Jasper National Park and we (2) _____ there for one night. My parents have already made the hotel reservation. Then we (3) _____ a car to go to Calgary. My mother wanted to go to Toronto, but we (4) _____ time. It's too far. I'm going home next week. (5) _____ I _____ you when I get home? We (6) _____ so that I show you my photographs. You (7) _____ how many bears we have seen!

See you soon
Dalia

SPEAKING

4 In pairs, imagine you are planning a trip from Vancouver to Toronto. Make dialogues. Use the words and phrases in the box below.

fly go by train go by coach
hire a car take the ferry
drive slow expensive
uncomfortable

A: How shall we get there?

B: Shall we go by train?

A: No, that's too slow. Let's fly.

5 Imagine you are going to Malaysia on holiday. Make some plans. Note down your answers to the following questions:

- 1 How will you travel there?
- 2 How long will it take to get there?
- 3 What will you do there?
- 4 What will the weather be like?
- 5 What food will you eat?
- 6 What will you do when you get back?

6 In pairs, ask and answer the questions in exercise 5.

A: How will you travel to Malaysia?

B: I'll go by plane.

7 In a group, decide what you will take on your trip. You can choose words from the box below and think of your own items, too. Use *Shall we ...*, *Let's ...* and *How about ...*

guidebook towel suncream money passport skis
insect repellent mosquito net warm jacket
suitcase bed waterproof coat map of England tent shorts

A: Shall we take a guidebook?

B: Yes, that sounds like a good idea.

C: How about checking online for tourist attractions there first?

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



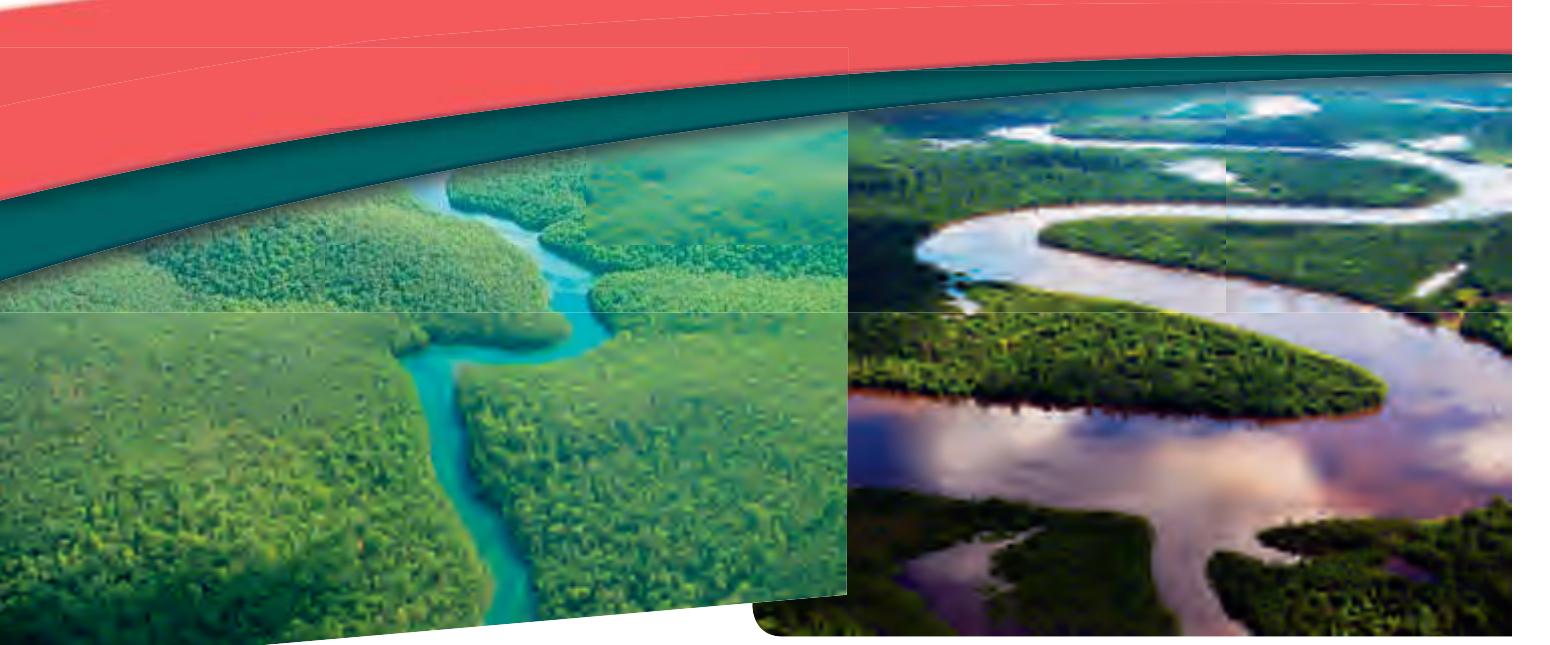
The journey of a thousand miles begins with a single step.
Laozi, Philosopher

Speaking strategies

Dialogue

- First, think about your trip and what you might want to say. Use some words and expressions provided.
- Practise saying expressions to yourself (e.g. *What do you think?*).
- Write notes (e.g. where we want to go, what we want to do). Use your notes to help you remember what you want to say; you should be able to look at them briefly for ideas and then continue speaking to your partner.





SPEAKING

1 What journey would you like to make? Work in a group to discuss your answer.

READING

2 Read about this great journey. How do you think a person should prepare for such a journey? Discuss in pairs.

The longest swim

On 7th April 2007 CE, the swimmer Martin Strel completed an incredible journey. He swam the entire length of the Amazon River! This was the longest swimming journey ever.

Martin set off from Peru on 1st February and arrived in Brazil ⁵ sixty-six days later. The Amazon River in South America is a very dangerous place. It is home to the bull shark, which is the most dangerous shark to humans. He said that his best protection from predators was a group of pink dolphins. These friendly creatures accompanied him every day, swimming alongside him. Martin ¹⁰ kept up a strict routine during the Amazon swim. He stopped for a short break each day for lunch. Every day he swam around eighty-four kilometres.

Before he completed this amazing journey, Martin had already broken other records. He swam across the English Channel in ¹⁵ 1997 CE, and then became the first man to swim across the Mediterranean, from Tunisia to Italy, in the same year. Then, between 2000 CE and 2004 CE, he swam the River Danube in Europe, the Mississippi in the USA, the Paran in Argentina and the Yangtze in China. He also broke the record for the longest continuous ²⁰ swim as he swam around 504 kilometres non-stop down the Danube.



COMPREHENSION

3 Read the text again. Answer the following questions.

- 1 Research the length of the Amazon River. Did Martin Strel swim down the entire river?
- 2 What kind of danger was there along the Amazon River? How did Martin protect himself?
- 3 What records did Martin break? Complete the following table with the relevant information.

Record	Year

- 4 Why do you think Martin decided to swim the Amazon River?
- 5 Do you think you are able to break a certain record? If so, what is it? If not, why not?



WRITING

4 Write a short description of the Amazon River. Use the text in exercise 2 and your answers to exercise 3 to help you.

SPEAKING

5 What is the longest journey you have been on?
Discuss with your partner.

VOCABULARY: Tours

6 These words are all connected with tours. Which words describe geographical features? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

valley jeep safari cliff hospitality dune rock formation
carving archaeological prehistoric awe-inspiring nomadic

LISTENING

7 Listen to a description of a tour to Wadi Rum in Jordan.
Which ways of travelling are mentioned?

8 Listen again and complete the following table in your notebook.

Geographical features	Activities to do	Sites to visit



WRITING

9 Write about a memorable journey that you have been on.
Use the model text in exercise 2 to write three paragraphs describing the sequence of events. Then, revise your work for clarity of ideas and coherence.

Project

Write about a country.

Your task

- Choose a country that interests you. Carry out some research on the Internet, in your school library or a public library.
Make notes on some of the following:
 - climate
 - landscape
 - wildlife
 - food and culture
 - interesting places
 - means of transport
- Write a short text about the country that you have chosen using your notes on the above areas, including:
 - why you would like to visit this country
 - what you would like to see there
 - how you would travel around
- Prepare some questions to ask your classmates about the country they have chosen. Read your text to the class. Answer questions about the country.



- Speak about a country. Choose one or two aspects of the country you wrote about. Do more detailed research. Remember the following:
 - Make clear notes.
 - Organise your notes into a logical order.
 - Practise with a partner. Are you speaking clearly and slowly?
 - Are you being expressive with your voice?
 - Are you making eye-contact?
- Finally, present your speech to a group of your classmates.

MODULE
5



What type of climate is it in this picture? What other types of climate are there?

Climate and Earth

Outcomes

- To read about climates, global warming, climate change and volcanoes
- To listen to a radio programme about the weather and climate, and a news report about the Sahara Desert
- To use vocabulary related to climates and climate change, global warming, Earth, adjectives and volcanoes
- To talk about definitions, the climate, the weather, a drought in Australia and climate change
- To recite a poem in English
- To use defining and non-defining relative clauses
- To write about a radio programme, a drought in Australia, a town, causes of climate change and a volcanic eruption

What is happening in this photograph?



What do you think this picture represents?

Project

Write a report about climate change.

Unit 7

Weather and climate

Grammar

defining relative clauses

BEFORE YOU BEGIN

- 1 What is the climate like at the North and South Poles? What is it like on the Equator? Why do you think these places have different climates?
- 2 Read the words in the box. Where in the world can you experience these types of climates? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.
polar tundra mountain temperate desert monsoon tropical
- 3  Read and listen to the article about different climates. Which climate do you live in? How has pollution affected it?

One world, many climates

Climates vary hugely in different parts of the world. They determine what an area is like, and they affect the people who inhabit the region as well as the plants and animals that live there. There are eight main types of climate:

- 1 **Polar** areas are very cold, with strong, dry winds. The temperature in summer is never higher than ten degrees centigrade, and ice and snow cover the ground.
- 2 Areas that have a **tundra** climate include Russia and North America. They are usually cold, with very short summers. There is very little rain. This means that not many trees can grow.
- 3 In **mountain** areas, the height of the mountains determines the climate.
- 4 Areas that have a **cool temperate** climate include Northern Europe and the USA. There is rain almost

all year. The summers are usually warm, and the winters are not very cold.

- 5 Places that have a **warm temperate** climate, such as Southern Europe, southern parts of the USA and South America, have hot, dry summers. Winters are not usually cold.
- 6 Areas where there is less than twenty-five centimetres of rain each year have **desert** climates. North Africa and central Australia are examples. During the day it is very hot, but at night it becomes very cold.
- 7 In India and South-East Asia, there is a **monsoon** climate, so the weather changes suddenly. Months of heavy rain follow months of dry weather.
- 8 Places where there is a **tropical** climate are near the Equator. It is always hot and wet in these areas, and rainforests grow there.

COMPREHENSION

4 Read and listen to the article again. Answer the following questions.

- 1 How do you think a climate affects the plants and animals from one area to another?
- 2 How many types of climate does the article mention? Which climate do you think Jordan has?
- 3 Which other climate do you think would be interesting to experience? Why?
- 4 Which climate do you think causes danger to people the most? Explain your answer.

5 What type of climate does each of these sentences describe? Refer to the information in the article to help you decide.

- 1 There is a sudden change from wet to dry weather. [monsoon](#)
- 2 The weather is often wet and it isn't usually very cold.
- 3 Summers are very short and there aren't many trees.
- 4 It's always hot and wet.
- 5 It's very hot during the day but very cold at night.

GRAMMAR: Defining relative clauses

6 Complete the sentences with *who*, *whose*, *which*, *when* or *where*.

- 1 An iceberg is a huge piece of ice which floats in the ocean.
- 2 Climates affect the people _____ inhabit the region.
- 3 He's the man _____ daughter I met in Jordan.
- 4 An art gallery is a place _____ paintings are hung.
- 5 Summer is the time of year _____ we go on holiday.

7 Join the following sentences using the relative pronouns in brackets.

- 1 Climates affect the plants and animals. The plants and animals live there. (which)
- 2 The man told me that there would be a storm this weekend. The man was reading a newspaper. (who)
- 3 Russia is a country. Its climate is dry and very cold, with short summers. (whose)
- 4 North Africa is a place. There is a desert climate in North Africa. (where)

SPEAKING

8 Work in pairs, Student A and Student B. Give your partner definitions of the words in your list from the box on the right using defining relative clauses. Your partner guesses the word.

A: This is a country that is to the north of the United States.

B: Is it Canada?

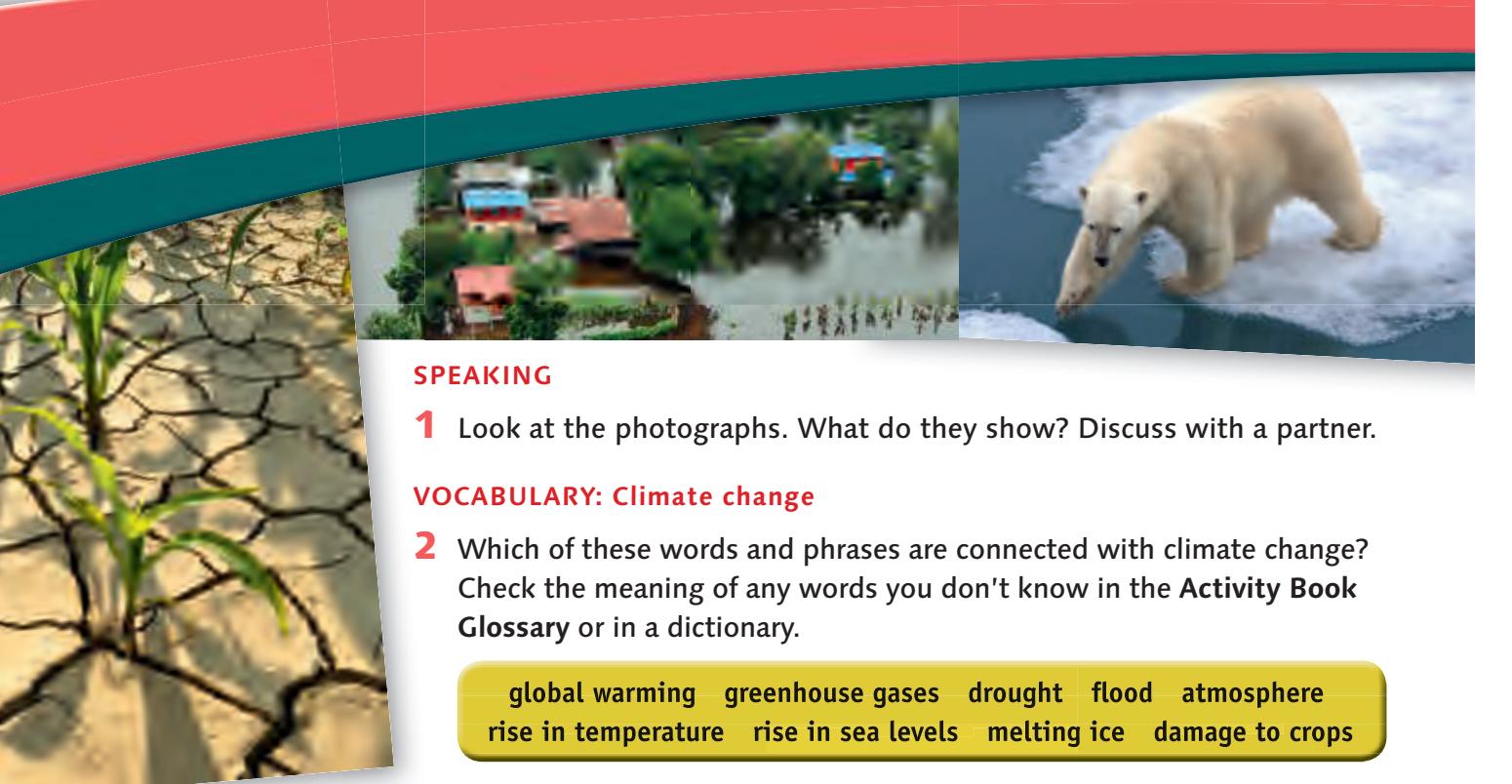
A: Yes, it is.

Student A

Canada
supermarket
stapler
cabin crew
1990

Student B

South Korea
chemist's
hole punch
builder
2005



SPEAKING

1 Look at the photographs. What do they show? Discuss with a partner.

VOCABULARY: Climate change

2 Which of these words and phrases are connected with climate change? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

global warming greenhouse gases drought flood atmosphere
rise in temperature rise in sea levels melting ice damage to crops

LISTENING

3 Listen to the radio programme. What is the difference between weather and climate?

4 Listen again and answer the questions.

- 1 What is the main idea of the audioscript?
- 2 What is described as a 'giant blanket of air'?
- 3 What negative impact can weather have on Earth?
- 4 What causes global warming? What can people do to reduce it?
- 5 What do you think will happen to the world's climates in the future?

WRITING

5 Listen to the radio programme again. Then write a summary of the programme using the words in the box in exercise 2.

SPEAKING AND WRITING

6 Fill in the blanks with the words from the box to complete the following poem. Discuss its meaning. Then, recite it to the class.

mighty sand ocean
Humble drops
water grains eternity

Little ____ of ____,
Little ____ of ____,
Make the mighty ____
And the pleasant land.

Thus the little minutes,
____ though they be,
Make the ____ ages
Of ____.

7 Write your own poem about a topic of your choice. Then, recite it to the class.

VOCABULARY: Climates

8 Write the descriptions in the box under the correct types of climates.

very cold ice and snow very short summers
very little rain rain most of the year not very cold winters
hot in the day, cold at night very heavy rain hot and wet

Polar	Tropical	Desert	Monsoon	Cool temperate	Tundra
very cold					



PRONUNCIATION

9 Listen to the words in the box. What do they have in common? And in what way are they different? Listen again and repeat.

Jordan Valley Russia North America North Africa
Southern Europe South America Jordanian Badia
South-East Asia Central Australia India Northern Europe

Put the words in alphabetical order.

Research box



Global warming is due to greenhouse gases. How is Earth like a greenhouse?

10 Complete this report about desert climates with the words from the box.

survive cold surface
rainfall winters desert

Desert climates

Around 20 percent of the (1) surface of Earth is desert. Climates in the desert are either hot or (2) _____. The Jordanian Badia desert reaches 80 percent of the total area of the Kingdom. However, Jordan is among the few countries that have a (3) _____ climate, but that also enjoy mild to cool and wet (4) _____. That's why we find Aqaba city and Jordan valley hot in summer and warm in winter.

The Badia desert is rich in wildlife. In the 1920's, some animals like the Arabian oryx didn't (5) _____ due to climate change and the small amount of (6) _____. As a result, the Jordanian authorities set up the Shaumari Reserve in 1975 CE to save the few remaining numbers of the Arabian Oryx.





SPEAKING

1 Look at the photographs. What do you think they represent? Discuss with a partner.

VOCABULARY: Global warming

2 These words are all connected to global warming. Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

extinction efficiency appliance organic conserves enlighten absorb

The words in bold are in the wrong sentences. Put them in the correct place.

- 1 Spread awareness about global warming and **absorb** your friends and family.
- 2 Plants **enlighten** water through roots, stems and leaves.
- 3 Over the years, the world has witnessed the **conserves** of many animal species.
- 4 Minimising the use of electricity saves money and **extinction** energy.

READING

3 Read this newspaper report on tips that help save the planet's environment. How can this problem be solved?

Be Active!

• Reduce, reuse and recycle!

Did you know that a 1.5l bottle requires less energy and produces less waste than three 0.5l bottles? Avoid buying unnecessary items, reuse old material or recycle them into new products.

• Turn off those lights!

Did you know that you are using a huge amount of energy by keeping your electronics (light bulbs, phone charger, etc.) plugged in? Try using manual appliances instead of electric ones, if available, and keep watching TV and using your computer to a minimum.

• Go organic!

Did you know that organic farming cuts the production of carbon dioxide and nitrous

oxide by at least half? It also requires less irrigation, which conserves water and

20 energy. It's not only better for the planet; it's healthier for you too!

• Plant a tree!

Did you know that a single tree will absorb approximately one tonne of carbon dioxide 25 during its lifetime? So start digging!

• Encourage your friends!

Finally, did you know that you can double the outcomes by sharing the above information? Set up recycling programmes 30 and encourage energy efficiency at your school and neighbourhood. The more people you manage to enlighten, the greater YOUR help to save the planet will be (but please take action yourself too)!

COMPREHENSION

4 Besides saving the planet's environment, how can the 'suggested' ideas help you as an individual? Use full sentences.

Reduce, reuse and recycle!

Turn off those lights!

Go organic!

Plant a tree!

Encourage your friends!

SPEAKING

5 What do you think of when you hear or see these words? Discuss your ideas with a partner.

sun rain wind cloud ice flood drought

When I hear or see the word 'ice', I think of white snow and polar bears.

SPEAKING AND WRITING

6 Imagine you are living in Australia. There is a very bad drought and no rain has fallen for many years. The earth is turning to dust, and crops are dying. What can you do? Discuss your ideas with a partner and write notes.

7 Read these sentences about the drought in Australia. With your partner, think of more sentences to add to the list.

- It's the worst drought in 100 years. There isn't much water available.
- Crops can't grow. Farmers have lost a lot of money.
- There was some rain last week. It hasn't had a big effect.
- Two million people live in the area. Luckily, they have enough to drink.
- Forests are becoming very dry.

8 Refer to your ideas in exercises 6 and 7 to write a newspaper report about the drought in Australia. Use the newspaper report on page 60 as a model and include at least one defining relative clause in your work. Then share your work with the class.

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



There is no such thing as bad weather, only different kinds of good weather.

John Ruskin, Critic (1819 CE–1900 CE)

Writing strategies

Writing a newspaper report

- As you plan with a partner, write some notes about what you want to discuss (e.g. What do we eat? How do we get water?)
- Ask and answer questions as you discuss your plan.
- Use words and expressions you have learnt in this unit (e.g. victims, as a result, safety).

Unit 8

Earth



BEFORE YOU BEGIN

Grammar

non-defining relative clauses

- 1 What do the photographs show? Do you know what subject they all have in common? Discuss with a partner.
- 2 Read the words in the box. Which are connected to Earth? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

dramatic ice age eruption asteroid
rock fossil

- 3 Read and listen to this magazine article. Who or what can tell us about climate changes in the past?

Earth's climate story

Earth's climate is changing, but this is not new. Over millions of years, Earth has experienced many dramatic climate changes. For example, several ice ages, when glaciers covered much of Earth's surface, have taken place. In the past, Earth's climate was affected by sudden disasters, such as huge volcanic eruptions and clashes with asteroids. These events filled the atmosphere with smoke and dust, which blocked out the Sun, causing the climate to become cold and dark. Many plants and animals probably died on these occasions.

Geologists, who study Earth's rocks and how they formed, can 'read' layers of rock. These layers provide a record of what happened in the past. In warm periods of Earth's history, there were many plants and animals which eventually

died and were fossilised in layers of rock.

Archaeologists have also discovered evidence that shows how Earth's climate has changed over millions of years. For example, they have found fossils of trees in parts of Antarctica, which prove that this area was much warmer 110 million years ago than it is today.

Humans, whose activities might be causing global warming today, need to take action. Otherwise there will probably be more extreme climate changes in the future. Nobody knows for sure what to expect. However, Earth, which has already survived some dramatic changes in its long history, may have to face some challenges in the future!

COMPREHENSION

4 Read and listen to the article again and answer these questions.

- 1 When did glaciers cover much of Earth's surface? *during several ice ages*
- 2 Which disasters caused the climate to become cold and dark?
- 3 What can geologists discover from the number of layers of rock?
- 4 What have archaeologists found in Antarctica and what does this prove?
- 5 What is meant by the words 'take action'? What kind of action might need to be taken?
- 6 What do you think the climate will be like in the future? Explain.



GRAMMAR: Non-defining relative clauses

5 Choose the correct alternatives in the sentences based on the text on page 62.

- 1 Sudden disasters filled the atmosphere with smoke and dust, *who / which / whose* blocked out the Sun, causing the climate to become cold and dark.
- 2 Several ice ages, *which / when / who* glaciers covered much of Earth's surface, have taken place.
- 3 Geologists, *which / whose / who* study Earth's formation and its rocks, find out what happened in the past by looking at layers of rock.
- 4 In the Antarctic, *who / which / where* plants and animals face a harsh cold environment, archaeologists have found evidence that this area was once much warmer.
- 5 Humans, *who / whose / which* activities cause global warming, need to take action.

SPEAKING

6 Work in a group. Make a sentence about one of the places in the box below. Then add more information to the sentence using a non-defining relative clause.

the Sahara Desert the Taj Mahal the Equator the Amazon River Amman

A: The Sahara Desert is in Africa.

B: The Sahara Desert, which is in Africa, is very hot.

WRITING

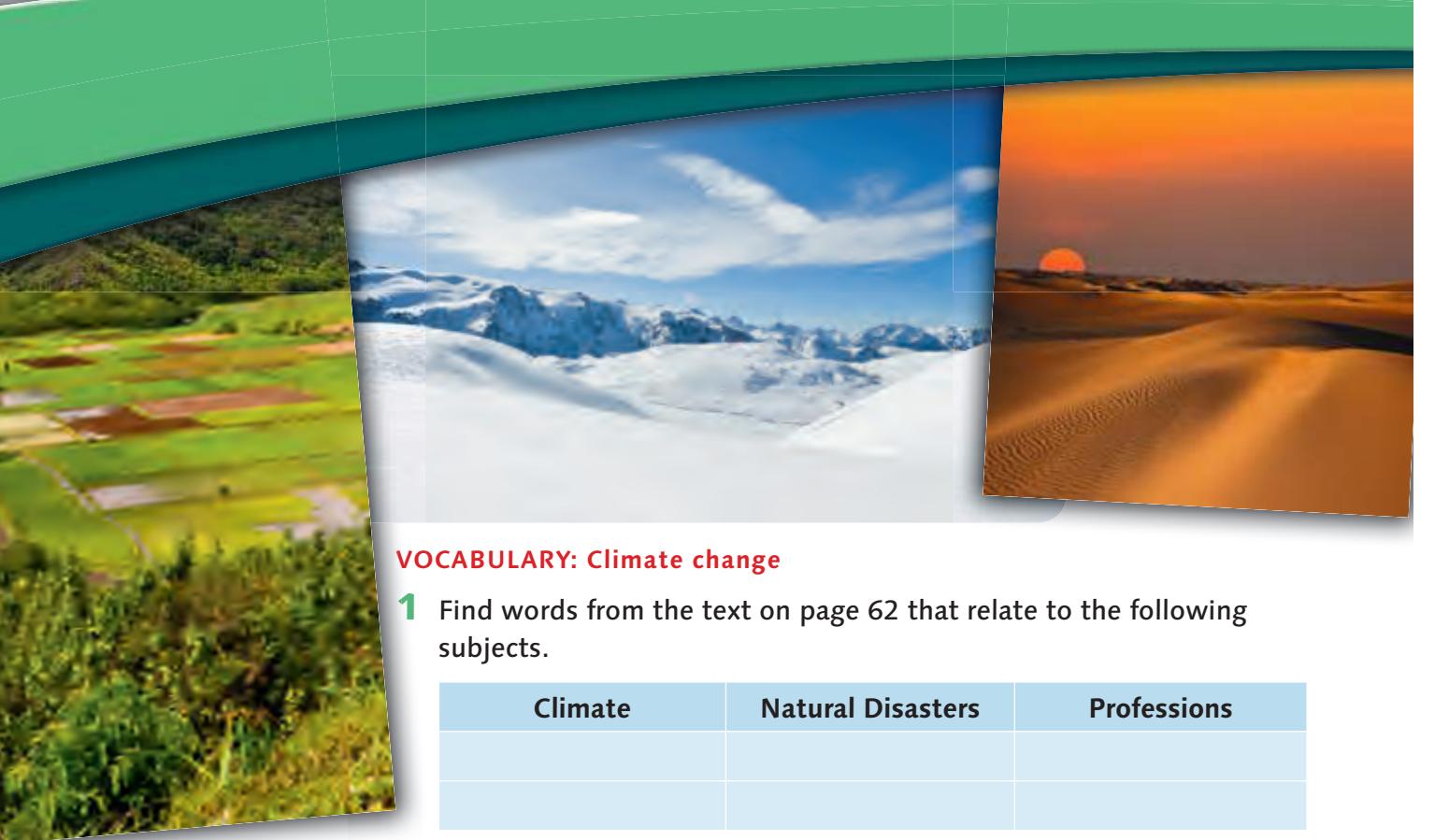
7 Read these sentences from a London guidebook.



The Post Office Tower, which was built in 1964 CE, is 189 metres high.

Charles Dickens, whose house is in Bloomsbury, was a famous writer.

Write similar sentences about a town you know well. Include a non-defining relative clause in each. Then share your work with the class.



VOCABULARY: Climate change

1 Find words from the text on page 62 that relate to the following subjects.

Climate	Natural Disasters	Professions

VOCABULARY: Adjectives

2 Complete the sentences about changes to Earth using the words in the box.

warm fertile dark **frozen** small

- 1 In past ice ages, much of Earth's water was frozen.
- 2 Volcanic eruptions made the climate cold and _____.
- 3 In _____ periods, there were many plants and animals.
- 4 _____ dinosaurs once lived in Antarctica.
- 5 The southern Sahara was once a _____ valley.

LISTENING

3 Listen to this news report. What have the archaeologists found and where?

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



*Wherever you go, no matter what the weather,
always bring your own sunshine.* Anthony
J.D'Angelo, Author



READING AND GRAMMAR: Non-defining relative clauses

4 Read and complete the news report. Use the phrases from the box.

who later on established the Royal Society for the Conservation of Nature
that used to be covered with plants
who both aim at turning the desert in Aqaba into an oasis that bring back the desert to life
which were full of trees in the past

Jordan's wildlife

Through the years, Jordan has faced several environmental problems. One of these problems is the deforestation of areas

(1) that used to be covered with plants. These areas, (2) _____, have now become deserts. The loss of forested areas has put many animal species, as well as the soil, in danger. The decline of wildlife was first noticed by a group of hunters many years ago,

(3) _____, a non-governmental organisation that carries out projects to protect the environment. The Jordanian government has also taken steps towards protecting the remaining forests, and started projects

(4) _____. One of these projects is the Sahara Forest Project, an agreement signed by Jordan and Norway, (5) _____.



SPEAKING

5 What other projects do you think can be carried out to protect nature? Discuss your ideas in a group. Then share your ideas with the class.

6 What causes climate change? Do you think climate change is important? Share your ideas with the class.

WRITING

7 Write three paragraphs about what causes climate change and if you think it is important for the future of Earth. Use your ideas and those of the class from exercise 6.

Writing strategies

Post-writing

- After you have written your first draft, read your work again carefully.
- Pay special attention to your spelling and use of grammar.
- If you like, you can exchange pieces of work with a classmate. Give each other useful feedback.



VOCABULARY: Volcanoes

1 These words are all connected to volcanoes. Which ones refer to kinds of rocks? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

plate crust crack pressure bubble up magma lava
basalt ash crush wear down obsidian

READING

2 Read the article about volcanoes. What positive effects do volcanoes have?

Volcanoes

a

Volcanoes occur where the plates in Earth's crust have cracks or weak spots in them. The very hot melted rocks, which lie deep under Earth's surface, are under a lot of pressure and they bubble up and try to squeeze out of any holes. The hot melted rocks are called magma. When a volcano erupts, the magma forces its way up through the surface and spills out as lava. Pieces of rock and ash are often thrown out with the lava.

b

About four and a half billion years ago, which was just after our planet was formed, there were probably many more volcanoes than there are now, and they erupted more often. Some of these were active in Jordan. Today, one sixth of Jordan is covered with basalt, or hardened lava. Most of this area is called the "Basalt Plateau", and lies between Azraq, Mafraq and the northern borders with Syria. There are at least forty volcanic centres in Jordan, all inactive now.

c

Volcanoes can be very dangerous to people when they are in the process of erupting. The hot lava can destroy towns and kill people. The ash can crush houses and plants. However, after the eruption, the ash and lava make the ground very good for farming. The magma cools into different kinds of solid rocks that wear down and become earth that is very good for growing plants. A long time ago, farmers used the obsidian (volcanic glass) for their tools. Even nowadays, obsidian is still used to make knives for medical operations.

COMPREHENSION

- 3 Choose a suitable heading for each paragraph, then explain your answers.
- 4 Read the text again and answer the questions.

1 Where do volcanoes occur?

Volcanoes occur where the plates in Earth's crust have cracks or weak spots in them.

2 What are the hot melted rocks called?

3 Are there any active volcanoes in Jordan nowadays? Explain.

4 Why is the ash dangerous?

5 Do you think it is safe to live near a volcano? Why/Why not?

Research box

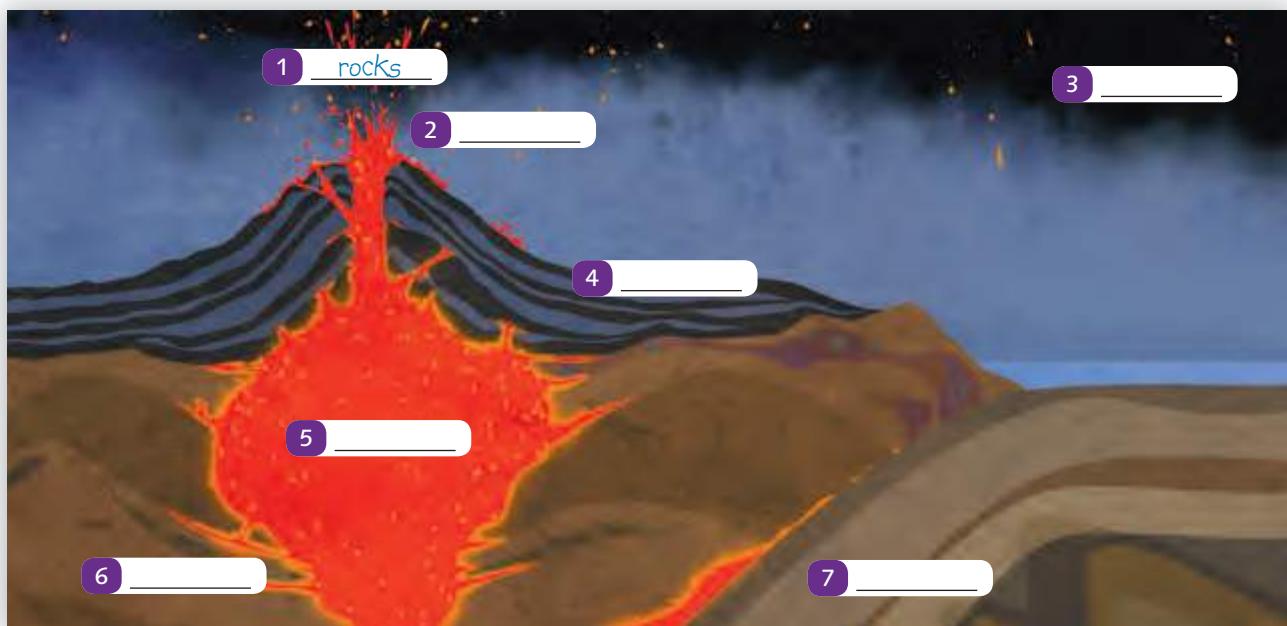


The deepest mines on Earth are only about four kilometres deep. How far is the centre of Earth from the surface?

VOCABULARY: The structure of a volcano

- 5 Complete the labels on the diagram of the volcano with the words from the box.

crust lava cracks plates rocks ash magma



PRONUNCIATION

- 6 Listen to the words in the box. Notice the sound at the beginning of the words. Repeat them. What are the letters that make the sound?

crust crack crush

We call the sound of two consonants a cluster. In pairs, find words in the vocabulary box on page 66 that start with other clusters. Write the words and say them.

WRITING

- 7 Imagine that you have just witnessed the eruption of a volcano. Write an account of what happened and what you saw.

Reading strategies

- After the first reading of the text, you will have a general idea of the content. Think about possible headings. What content would you expect for each heading? Underline the key words in each paragraph to help you.
- Now, read the text again more carefully. After you read each paragraph, consider what would be the most suitable heading for it.
- Consider why your headings are correct. What information in the paragraph helped you to choose the heading?

Project

Write a report about climate change.

Your task

If climate change causes the world to become warmer in the future, the effects will be different around the world. Choose a country and research the effects of climate change in it. Use the Internet, the school library or a public library. Then write a short report about it.

- Read the descriptions of world climates on page 56. Which climate does your chosen country have? Compare your ideas with a partner.
- Research climate change in your chosen country. Answer the questions.
- Write your report. Use your research and refer to the report below as a model. Then share your work with the class.

Questions

- Is climate change already affecting the country? If so, how?
- Are the people who live in your chosen country worried about climate change? If so, are they doing anything about it?
- If the world becomes warmer in the future, how will it affect this country and its climate?

- Design and make a campaign to get people to be aware/active against climate change.

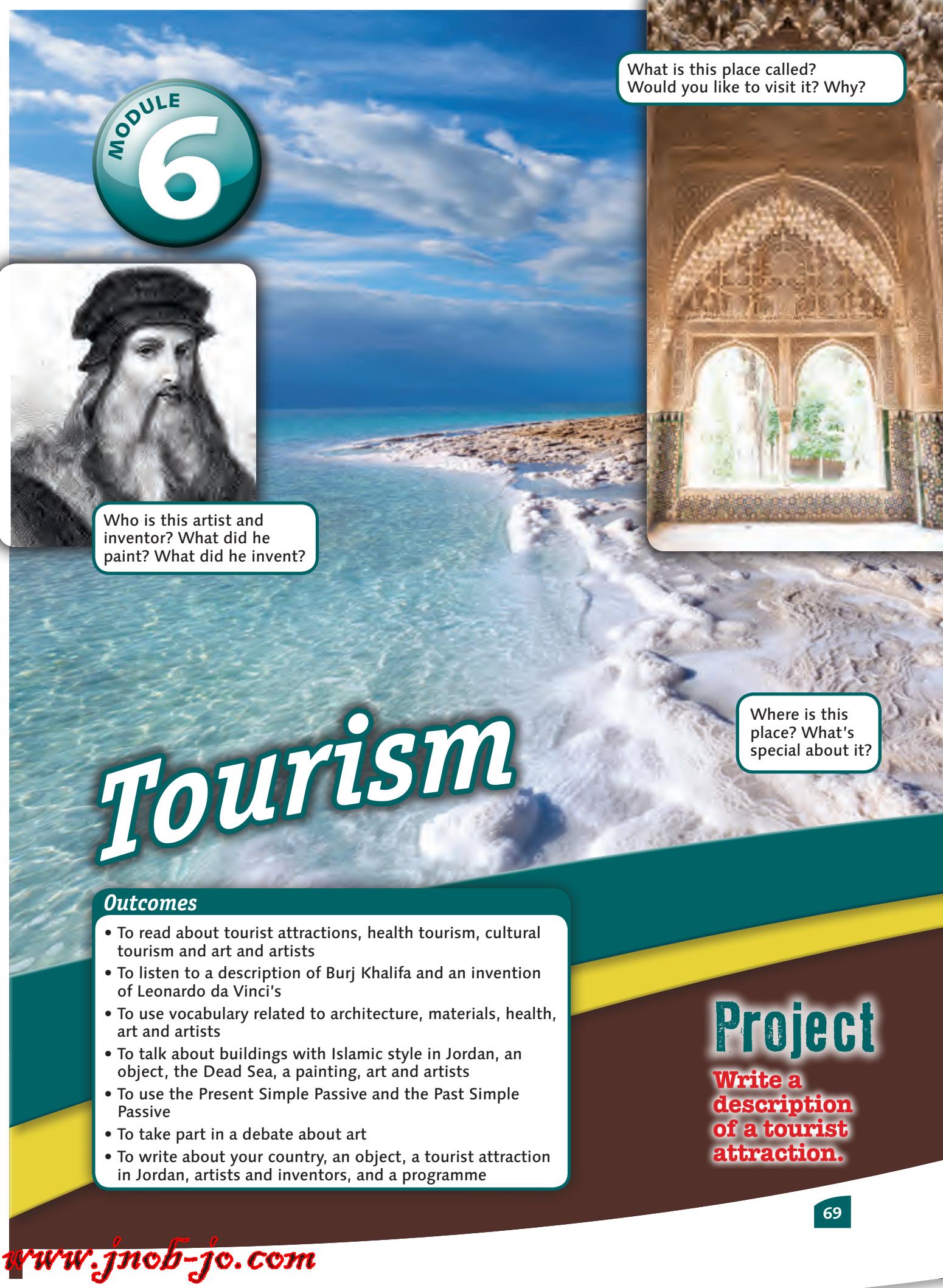
You should include:

- A poster with a slogan
- Facts
- Reasons to act
- Persuasive writing

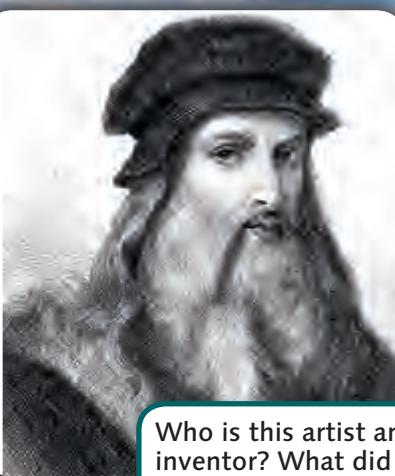
A model report

Climate change in Jordan

The Middle East is the world's most water-stressed region. Due to global warming and climate change, water resources are becoming even scarcer in countries such as Jordan. This country is one of the ten driest places in the world. It is a Mediterranean country that depends mostly on rain as its main water resource. However, recent years have witnessed shortage in the rainfall in different parts of the country, and as a result, many water streams have either dried out, or have become unsuitable for use. Plants and animals, which cannot adapt to the changed weather conditions, will die. According to the International Union for the Conservation of Nature, the countries with the highest number of endangered species include Djibouti, Egypt, Morocco, Saudi Arabia, Yemen and Jordan, which all have more than 80 endangered animal species.



MODULE 6



Who is this artist and inventor? What did he paint? What did he invent?

What is this place called? Would you like to visit it? Why?



Where is this place? What's special about it?

Tourism

Outcomes

- To read about tourist attractions, health tourism, cultural tourism and art and artists
- To listen to a description of Burj Khalifa and an invention of Leonardo da Vinci's
- To use vocabulary related to architecture, materials, health, art and artists
- To talk about buildings with Islamic style in Jordan, an object, the Dead Sea, a painting, art and artists
- To use the Present Simple Passive and the Past Simple Passive
- To take part in a debate about art
- To write about your country, an object, a tourist attraction in Jordan, artists and inventors, and a programme

Project

Write a description of a tourist attraction.

Unit 9



Tourist attractions

BEFORE YOU BEGIN

Grammar

the Present Simple
Passive

- 1 Can you think of an example of Islamic architecture in Jordan? Tell your partner what you think of it.
- 2 Read the words in the box. Which of these words do you think are related to architectural features? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

overlook spectacular courtyard marble fountain
arch dome plasterwork calligraphy arcade

- 3 Read and listen to the article. How objective is the speaker? Explain.

Alhambra Palace

Alhambra Palace in Granada is part of the impressive heritage of the long-lasting Islamic empire in Spain. Its name in Arabic (Qasr al Hamra) means 'The Red Castle'. This refers to the red colouring of the bricks that the original palace was built from. It has become an important tourist attraction in Spain because of its rich Islamic history. It has also had a lot of influence on worldwide art and architecture since it was built.

This palace, which was built on a hill overlooking Granada, has beautiful views. The first king arrived in the thirteenth century and constructed a royal palace. After that, other kings added more parts to the palace. This is why it has so many different styles.

Many tourists come to visit Alhambra Palace today to see the Islamic architecture. This includes the spectacular Court of the Lions,

20 which is probably the most famous part of the building. It is a square open-air courtyard with an impressive marble fountain in the centre. The fountain's name comes from the twelve lions that support the fountain. The lion was 25 a symbol of power in Islamic history and art. From this courtyard you can walk under arches into the Hall of the Two Sisters, whose wooden doors are over eight hundred years old. This room attracts tourists because of the beautiful 30 dome, shaped like a flower, and the detailed plasterwork on the walls. Islamic Spain was famous for its artwork and calligraphy, and there are many well-preserved examples in this room.

35 There is a great difference between the plain outside walls and the paintings and sculpture that cover the inside walls. It seems to be paradise on earth with the column arcades, fountains and pools that are preserved there.

COMPREHENSION

4  Read and listen to the text again and answer the questions.

- 1 Give another suitable title to the text.
- 2 What are the most important elements of Islamic style of Alhambra Palace?
- 3 The lion was a symbol of power in Islamic history and art. Name other symbols of Islam. What do they represent?
- 4 How do you think Alhambra Palace should be preserved?

SPEAKING

5 Are there any buildings in Jordan with similar architectural features? Discuss with a partner.

GRAMMAR: The Present Simple Passive

6 Write sentences in the Present Simple Passive. Use *by* only if necessary.

- 1 The Alhambra Palace / locate / in Granada, Spain.
- 2 The palace / situate / on a hill overlooking beautiful views.
- 3 It / visit / tourists from all over the world.
- 4 Islamic style / represent / through arches, calligraphy and a dome.
- 5 Walls / design / with detailed plasterwork.

SPEAKING

7 In pairs, ask and answer the questions using the Present Simple Passive.

Student A

- 1 Where / rice / grow?
a Denmark b France c China
- 2 What / make / at a bakery?
a cars b bread c toys
- 3 Where / the Mona Lisa / display?
a Rome b Madrid c Paris

A: Where is rice grown? B: Rice is grown in China.

8 Write three general knowledge questions. Then, ask your partner your questions.

WRITING

9 Write three paragraphs about your country or region giving facts about it and your own opinion. Use the Present Simple Passive.



Student B

- 1 Where / paella / eat?
a Spain b China c India
- 2 Who / bury / in the pyramids?
a builders b pharaohs c kings of England
- 3 Where / River Nile / find?
a Japan b England c Egypt

Answers

Student A: 1c, 2b, 3c
Student B: 1a, 2b, 3c



READING

1 Complete the postcard with the correct form of the verbs in brackets.

Dear Nadia,

I (1) am having (have) a really incredible time here. My parents and I (2) _____ (stay) at Burj Al Arab Hotel in Dubai at the moment! The hotel (3) _____ (build) on an island, so all visitors (4) _____ (take) there by helicopter.

Our rooms (5) _____ (decorate) in marble and gold and they (6) _____ (equip) with everything we need. In the evening, we (7) _____ (entertain) by the fish in the aquarium in the rooftop restaurant.

See you soon.

Warda

stamp

To: My best friend Nadia

VOCABULARY: Materials

2 The words in the box are all connected to materials. What is each material used for? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

steel marble silk wood glass plastic metal
diamond bronze brass gold silver

GRAMMAR: The Present Simple Passive

3 Make sentences. Choose from each column.



1 The scarf		from steel.
2 The statue	is designed	from marble.
3 The tower	is made _____	of silk.
4 The building	is sculpted	by an architect.
5 The ring	is built	with diamonds.
6 The furniture	is decorated	of wood.
7 The vase		of glass.

The scarf is made of silk.

WRITING

4 Choose one of the objects in the pictures and write about it using the Present Simple Passive. You can use these verbs and words relating to materials:

make (of) use (for) construct (from) produce design
plastic glass wood metal steel



This object is made of plastic and metal. It is used for writing.

SPEAKING

5 Work in a group. Take it in turns to talk about your chosen object. Your group members guess what it is.

6 Think of another object. Use the Present Simple Passive to ask your partner questions about their object and answer questions about yours. Can you guess your partner's object?

A: Is it made of metal? B: No, it isn't.

LISTENING

7 Look at the picture on the right. What do you think the design was inspired by? Discuss with a partner.

8  Listen to the report about this new building. How did nature inspire the design?

9  Listen again and complete the following table with information you gathered from the audioscript. Use full sentences. Is Burj Khalifa an interesting place for you to visit? Why/Why not?



Burj Khalifa	
Type	
Location	
Height	
Architecture	
Interior design	

QUOTATION

Read the quotation. Do you agree with it? Why/Why not? Translate the quotation into Arabic.



Architecture cannot be understood without some knowledge of the society it serves.

Sir Hugh Maxwell Casson, Architect (1910 CE–1999 CE)





VOCABULARY: Health

1 Which words refer to health? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

delightful benefit respiratory disease
therapeutic vast cure headache export resort

READING

2 Read the article about the Dead Sea. In what ways is the Dead Sea such a good place for health tourism?

The Dead Sea

Jordan is known for its tourist attractions worldwide, especially **those** related to health tourism. The Dead Sea, which is the lowest point on Earth, is located southwest of the capital city, Amman. **It** is a delightful piece of scenery with many health benefits. It is hot in summer and warm in winter. The air is rich in oxygen, which is helpful for people with respiratory and skin diseases. The Dead Sea, which is visited by thousands of tourists from all over the world, is famous for its therapeutic waters. In fact, the water contains vast amounts of minerals such as magnesium, calcium, potassium and salt that are used to cure skin diseases, headaches and foot pain. The salt from the Dead Sea is exported to countries all around the world, due to **its** health benefits. These amounts of salt make it impossible for marine creatures to live in its water, which is why it is called the Dead Sea. There are also special treatment resorts at the Dead Sea. Patients spend weeks finishing their treatment and most of them go back home with amazing results.

COMPREHENSION

3 Read the article again. Then, answer the questions using complete sentences.

- 1 Give another suitable title to the text.
- 2 What do the words in **bold** refer to?
- 3 What is the main idea of the text?
- 4 Describe why the Dead Sea has been given its name.
- 5 What are the health benefits of the Dead Sea?
- 6 What other places for health tourism can you think of? What is special about them?

PRONUNCIATION

4  Listen to the sentences. Notice the sound of the cluster **th** in the words. Listen again and repeat. Then put the words with **th** in the correct column in the table.

- 1 The Dead Sea, which is the lowest point on Earth, is located southwest of the capital city, Amman.
- 2 The Dead Sea, which is visited by thousands of tourists from all over the world, is famous for its therapeutic waters.

the	Earth

In pairs, find in the text more words and place in the table.

GRAMMAR: The Present Simple Passive

5 Match the phrases to make sentences about the Dead Sea.

1	Jordan	are provided	with the therapeutic waters.
2	The Dead Sea	are treated	for its tourist attractions.
3	Many diseases	are found	to cure skin diseases.
4	The Dead Sea resorts	is located	southwest of the capital city Amman.
5	The Dead Sea water	is known	in its waters.
6	Vast amounts of minerals	is used	for patients from all over the world.

Jordan is known for its tourist attractions.

SPEAKING

6 Do you think the Dead Sea is a good place to visit? Would you like to go on holiday there? Look back at the text and prepare five reasons to visit the Dead Sea. Use non-defining relative clauses if you can.

The Dead Sea, which is visited by thousands of tourists from all over the world, is famous for its therapeutic waters.

7 Explain your reasons to a partner and listen to their reasons. Are your reasons the same?

WRITING

8 Choose a tourist attraction in Jordan. Write a postcard to a friend and describe what you have seen there. Use the postcard on page 72 as a model and refer to the article in exercise 2 on page 74 to help you. Then share your work with the class.

Writing strategies

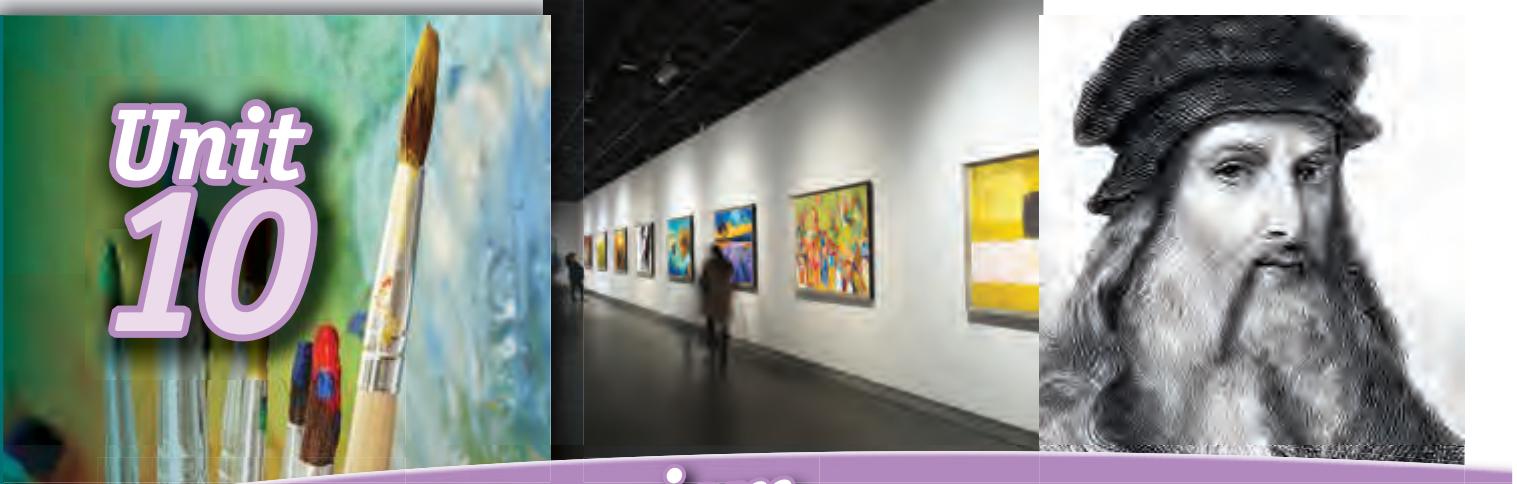
Writing a postcard

- Make a list of the information you want to mention in your postcard.
- Remember that a postcard is short – up to one hundred words are needed.

Research box

? The Dead sea is the lowest point on Earth. What's its surface elevation?

Unit 10



Cultural tourism

Grammar

the Past Simple Passive

BEFORE YOU BEGIN

- 1 Look at the pictures. How do you think they are related to cultural tourism?
- 2 Read the words. Which ones refer to people? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

artist sculptor sketch drawing painting effect
portrait examine affect

- 3 Read and listen to the text about Leonardo da Vinci. What is his most famous painting? What is his most interesting invention?

The power of imagination

Cultural tourism means travelling to a certain country to experience its culture, including its language, history, art and other aspects of culture. Thousands of tourists from around the world visit the Louvre Museum in Paris, France, to see the *Mona Lisa* by Leonardo da Vinci. Leonardo da Vinci was born in Italy in 1452 CE. He is regarded as one of the world's greatest artists for being a talented musician, sculptor as well as being a brilliant scientist and inventor.

His notebooks were filled with sketches and drawings of many things: the human body, birds in flight, and designs for the different machines that he invented.

When he was fifteen years old, Leonardo began to work for an artist. He learnt how to paint, sculpt and design jewellery. By the age of twenty, Leonardo was a great painter and sculptor.

Leonardo began work on many large paintings, but very few of them were finished. He did,

however, discover how to use light and dark to create effects. His painting *Mona Lisa* is a masterpiece of light and dark, and it is probably the most famous portrait in the world today.

Leonardo was greatly interested in science and nature, so he examined plants and trees to discover how they grow. He also studied rocks to see how they were formed, and he carried out tests to show what things can affect the wind and the oceans.

Leonardo was also very interested in machines and sketched many inventions. He studied how birds use their wings to fly, and invented some 'flying machines': a type of parachute, an early helicopter, and an aeroplane.

During his lifetime, Leonardo was admired and greatly respected. However, when he died in 1519 CE, his works were not really understood because he was a true genius, far ahead of his time.

COMPREHENSION

4  Read and listen to the text again. In which paragraph can you read about...?

- 1 Leonardo the Scientist
- 2 The talented child
- 3 A masterpiece of light and dark
- 4 Leonardo's death
- 5 Inventions by Leonardo Da Vinci
- 6 Leonardo Da Vinci's birth and his different talents

GRAMMAR: The Past Simple Passive

5 Complete the sentences based on the text on page 76 with the Past Simple Passive form of the verbs in brackets.

- 1 Leonardo was born (bear) in 1452 CE.
- 2 His notebooks _____ (fill) with drawings of many things.
- 3 Very few of Leonardo's large paintings _____ (finish).
- 4 He also studied rocks to see how they _____ (form).
- 5 During his lifetime, Leonardo _____ (admire) and _____ (respect).
- 6 When he died in 1519 CE, Leonardo _____ (not understand).

6 Rewrite the sentences in the Past Simple Passive. Start each sentence with the words in bold. Use *by* only if necessary.

- 1 Vincent Van Gogh created **a famous picture**.
A famous picture was created by Vincent Van Gogh.
- 2 Some sunflowers inspired **Van Gogh**.
- 3 He painted **the picture** in the south of France.
- 4 He finished **the painting** in 1888 CE.
- 5 He used **lots of bright colours** in his painting.
- 6 He called **it Sunflowers**.
- 7 An art gallery bought **the painting**.

PRONUNCIATION

7  Listen to the following relative pronouns.

who where when what

Listen again and repeat. Do the words start with the same sound? Explain. Which sound does the word *why* start with?

SPEAKING

8 In pairs, ask and answer questions in the Past Simple Passive about Van Gogh's painting of *Sunflowers*. Use *by* when necessary.

- 1 Who ...? 2 Where ...? 3 When ...?
- 4 What ...? 5 What ...? 6 Who ...?

A: Who was *Sunflowers* painted by?

B: It was painted by Vincent Van Gogh.

QUOTATION

Read the quotation.

Do you agree with it? Why/Why not?

Translate the quotation into Arabic.



Learning never exhausts the mind.

Leonardo da Vinci,
painter and inventor
(1452 CE–1519 CE)





VOCABULARY: Word building

1 Read the text about Leonardo da Vinci on page 76 again and complete this table with the correct words.

Noun	flight	sculpture			invention	examination	discovery	
Verb	to fly		to design	to study				to sketch

Listening strategies

Pictures

- Listen carefully as you look at the picture.
- Don't worry if you don't understand every word – just listen for the important ones.
- As you listen, take notes. Write in abbreviations and focus on the important information and key terms (e.g. flying machine, bird).

VOCABULARY: Art

2 Match the beginning and the end of each sentence.

1 A musician	a sculpts or casts metal.
2 A sculptor	b does drawings and sketches.
3 A photographer	c creates music.
4 An artist	d takes photos.
5 A painter	e thinks of new inventions.
6 An engineer	f expresses ideas in paintings.

LISTENING

3 This picture shows one of Leonardo's inventions. Listen and number the parts.

a _____

b _____

d _____

e _____

c _____

f _____



4 Listen again and choose the correct answers.

- 1 The picture was taken from one of Leonardo da Vinci's
 - a paintings.
 - b** notebooks.
 - c portraits
 - d drawings.
- 2 The flying machine was invented by Leonardo in
 - a 1600 CE.
 - b** 1700 CE.
 - c 1500 CE.
 - d 1800 CE.
- 3 The flying machine was designed to look like
 - a a giant bird.
 - b** a giant helicopter.
 - c a giant plane.
 - d** a giant wing.
- 4 A rope was used to
 - a change position.
 - b** change the pedals.
 - c change direction.
 - d** change height.
- 5 The frame was constructed from
 - a rope.
 - b** wood.
 - c steel.
 - d** marble.
- 6 The wings were made of
 - a heavy glass.
 - b** heavy metal.
 - c heavy wood.
 - d** heavy material.

SPEAKING

- 5 Study Leonardo's flying machine in exercise 3. If it was built, do you think it would work? Discuss in groups.
- 6 Most people agree that Leonardo was a genius. Think of some other people who are often described as geniuses. Make a list with your group. Try to include some artists and inventors.
- 7 What makes a genius? Look at the names on your list to find answers. Discuss your ideas with your group and share them with the class.

READING AND SPEAKING

- 8 Work in pairs. Ask and answer the questions below. Choose an answer from the box. Use the Past Simple Passive in your answers.

Leonardo da Vinci John Logie Baird Emperor Shah Jahan William Shakespeare
 The Chinese Alexander Graham Bell Mozart Gustave Eiffel
 Thomas Edison Fawaz Touqan Tim Berners-Lee Rafiq Lahham

Mozart



Student A

- 1 Who painted the *Mona Lisa*?
- 2 Who wrote the play *Macbeth*?
- 3 Who invented the telephone?
- 4 Who painted *Tree and Moon*?
- 5 Who invented the television?
- 6 Who built the Taj Mahal?

Student B

- 1 Who composed the opera *Don Giovanni*?
- 2 Who wrote the novella *The Merchant and the Bird*?
- 3 Who invented gunpowder?
- 4 Who invented the electric lamp?
- 5 Who invented the World Wide Web?
- 6 Who designed the Eiffel Tower?

A: Who painted the *Mona Lisa*?

B: The *Mona Lisa* was painted by Leonardo da Vinci.

WRITING

- 9 Write a factfile about your favourite artist or inventor. You can use some of the examples in exercise 8.



READING

- 1 Read the article about the Jordan National Gallery of Fine Arts. What is special about it?
- 2 Which words are connected to art? Check the meaning of any words you don't know in the **Activity Book Glossary** or in a dictionary.

gallery fine arts patron magnificent promote
pottery contemporary remote display curate

Jordan National Gallery of Fine Arts

If you visited a country to learn mainly about its culture, that would be cultural tourism. The best places to start finding out about Jordanian culture are the museums and galleries in Jordan. **They** can give a tourist a good idea about art in this country, and how it has developed over the years.

- 5 One of the most magnificent places for art exhibition in Jordan is the Jordan National Gallery of Fine Arts. It was opened in February 1980 CE by the Royal Society of Fine Arts, and its patrons were His Majesty the late King Hussein and Her Majesty Queen Nour Al Hussein.
- 10 The gallery contains extremely valuable paintings, sculpture and pottery that represent both contemporary and Islamic arts. Exhibitions at the gallery contain works of art, sculpture and pottery by contemporary Jordanian artists such as Adnan Al Sharif and Alia Amoura, as well as artists from the Middle East and all around the world.
- 15 A recent project introduced by the gallery in May 2009 CE is the programme of the Touring Museum. The purpose of the programme, as its name shows, is to promote art to people all over Jordan, especially **those** who live in remote places. Art workshops and displays of the main exhibitions in the gallery are the main parts of the programme.
- 20 The gallery is closely linked to the Jordan Association of Artists, who organise and curate the Touring Museum. **They** aim to make art available to everyone, and also to make sure artists can be free to deliver their message. The Association has recently helped the Gallery to increase the number of exhibitions by female artists and continues to set up conferences on the subject
- 25 of Jordanian art and culture.

So, if you want to know more about Jordanian art and culture, go to the Jordanian Gallery of Fine Arts!

COMPREHENSION

3 Read the article again and answer the questions.

- 1 What is cultural tourism?
- 2 What do the words in **bold** refer to?
- 3 What did His Majesty the late King Hussein and Her Majesty Queen Nour Al Hussein do?
- 4 What does the gallery include?
- 5 Describe the Touring Museum project in your own words.
- 6 What is the Jordan Association of Artists' goal?
- 7 What has this association already achieved?
- 8 Do you think the Touring Museum is beneficial for people living in distant areas? Why/Why not?

SPEAKING

- 4 What other activities could the Jordan National Gallery of Fine Arts do to activate national interest in art? Discuss with your partner.
- 5 Many people say that art is the most important means of expressing one's ideas and feelings. Do you agree or disagree with this? If you disagree, what do you believe is more important? Have a debate to present your ideas.

WRITING

6 Can you design a new programme for promoting the artistic movement in Jordan? Write your plan and describe the process. Include answers to the following questions:

- 1 What is the name of the programme?
- 2 What is the purpose of the programme?
- 3 What are the steps for realising it?
- 4 What are the possible difficulties that you might face?

Name of the programme: _____

Purpose: _____

Process: _____

Difficulties: _____



SPEAKING

7 Use the plan in exercise 6 to give an e-presentation about your programme to the class and explain how it functions.

Research box



Who is Adnan Al Sharif and what are some of his most famous works of art?

Project

Write a description of a tourist attraction.



Your task

- Choose a tourist attraction. Research some facts about it on the Internet, in the school library or public library. Answer the questions.
- Imagine you have visited your chosen tourist attraction. Write a postcard to a friend and describe the place.
- Share your work with the class. Ask questions about the other places and answer questions about your chosen tourist attraction. Try to use the passive voice when you reply.

Taj Mahal

FACTS

- The Taj Mahal is located in India.
- It was built by the Emperor Shah Jahan as a memorial to his wife, Mumtaz Mahal.
- 20,000 workers were paid to construct the building.
- It was built out of the most expensive white marble and decorated with thousands of precious stones.
- Today it is regarded as a masterpiece, a symbol of India, and one of the Seven Wonders of the World.
- It is visited by about three million tourists every year.

Questions

- Where is the tourist attraction located?
- Is it natural or built?
If it is built, who was it built by? How was it built? What materials were used to build and decorate it? What is it used for today?
- If it is natural, why is it visited? How is it exceptional? What is it used for today?

- Design a brochure for your chosen attraction. This is a persuasive text, advertising your attraction to the public, so remember:
 - Use persuasive language
 - Present the brochure attractively (use pictures, photos, maps and anything else appropriate)



► Now go to **Extra reading B**

Revision B

1 Write down a word or name in each box. Then work in pairs. Talk about what you have written and explain why you wrote it.

a person who you like	
a building which inspires you	
an object which is valuable to you	
something which you carry with you every day	
an object which you'd like to buy	
a book which you'd like to read	
a place where you'd like to go	
a place where you were very happy as a child	

Ali is a person who I like very much. He is a kind and generous person.

2 Think of a famous invention. Use the Present and Past Simple Passive to ask and answer your partner's questions about it. Can you guess your partner's invention? Choose from the verbs in the box.

invent make (of) use (for) design (by)
construct (from) produce

3 Write about an inventor whose invention you think has had the biggest and most influential effect on our daily lives. Back up your opinion with information and facts.

4  Listen to an interview with a Jordanian scientist called Adnan Saleem. He is talking about global warming, and its causes and effects. What is global warming?



5  Listen to Adnan Saleem again. Answer the questions.

- 1 What is the message that the speaker is trying to deliver?
- 2 Is the information provided in the audioscript fact or the speaker's opinion?
- 3 According to professor Adnan, what effects does global warming have on our planet? And how can we reduce it?
- 4 In your opinion, which of these effects could be the most devastating? Explain.

6 Work in pairs. Ask and answer the questions using the phrases below and the Second Conditional.

- 1 you lose your passport on holiday
- 2 your boat starts sinking in the ocean
- 3 there is a fire in your building
- 4 your tent blows away in a storm
- 5 someone takes your suitcase by mistake at a foreign airport
- 6 you see an accident on the way to school

A: *What would you do if you lost your passport on holiday?*

B: *I'd go to the police, then ...*



7 Work in a group. Make and respond to suggestions about something interesting to do together this weekend (for example, going somewhere, doing a sport, watching something). See how long you can keep the conversation going!

A: *Shall we visit the museum this weekend?*

8 Write an invitation to your foreign friend, inviting them to visit Jordan in the summer. Explain the reasons you would like them to visit, mentioning Jordan's various tourist attractions, museums, landscape and wildlife, as well as Jordanian culture and climate.

Treasure Island

Robert Louis Stevenson

My name is Jim Hawkins and I live with my family at the Benbow Hotel in England. The hotel is in a small, quiet village near the sea. My mother and I 5 worked hard in the hotel, but my father, who was very ill, often went to see Dr Livesey.

One day, an old seaman with a large chest came to stay at our hotel. He was a very 10 tall man with a long scar on one side of his face. He said he wanted somewhere quiet to stay, and he told me, "If you see a seaman

with one leg, tell me immediately. I'll give you a silver coin every month."

15 A few months later, a blind man came to the hotel and asked for the old seaman. When he talked to the old seaman, he gave him a message from some pirates. The old seaman looked 20 very frightened and soon after, he disappeared.

The old seaman's chest was still in his room, so mother and I decided to open it and we found an old map



25 inside. It looked interesting. Then we heard a lot of noise outside the hotel. They were pirates and I was sure they wanted the map, so I told my mother we had to leave, and we went quickly and quietly out
 30 the back door. I decided to take this map to Mr Trelawney, a man I knew who was very clever, important and rich. When I got there, Dr Livesey was there, too and they looked at the map. Dr Livesey asked Mr
 35 Trelawney, "Have you heard of Captain Flint?" Mr Trelawney replied, "Yes, he was a terrible pirate who was very rich." "That's right," said Dr Livesey. "Well, I think this map shows where Flint buried his treasure."
 40 Mr Trelawney immediately said, "We have to go and find it."

We agreed to go to the island so the next day, Mr Trelawney went to a nearby town and hired a ship. He also found a
 45 captain and a crew to sail the ship for us. Dr Livesey, three friends and I arrived the following day. On the ship we met a man with one leg – Long John Silver. I remembered what the old seaman had said,
 50 but this man was the cook and he looked very friendly.

The next day, the weather was good so we set off for Treasure Island. We had plenty of food and the seamen seemed very happy.
 55 During the voyage, I sometimes helped the cook and I sometimes helped the other seamen. I liked being at sea although it was very tiring. The day before we arrived at Treasure Island, I decided to have an
 60 apple. Apples were usually kept in a big barrel but the barrel was almost empty so I climbed inside it. As I picked an apple up, I heard Long John Silver's voice as he was talking to the crew. He said that when we
 65 found the treasure, they were going to take the ship and that they were going to leave us on the island! They were pirates! I waited until they had gone away and then I quickly

ran to tell the doctor and Mr Trelawney.
 70 The next day, we reached the island. We looked at the map again and Dr Livesey pointed to a citadel on the island. He said we had to go there to be safe. Long John Silver and some of the pirates wanted to go to the island so I hid in their boat and went to the island with them. Mr Trelawney, the doctor, his three friends and the captain came later and ran to the citadel, carrying food and water with them.

80 I was hiding in the trees when I saw my friends run to the citadel and close the big doors. The pirates couldn't get in. I was trying to decide what to do when I heard a noise in the trees. Was it an animal? Was
 85 it a pirate? I felt scared but then I saw a frightened little man. He told me his name was Ben Gunn and that some pirates left him on the island three years before. Ben Gunn helped me to get to the citadel that
 90 night.

The next morning, Dr Livesey spoke to Ben Gunn. Ben told me that he had a boat and I decided to go and find it. I wanted to get back to our ship so I ran quickly to the
 95 east coast of the island and found the little boat. When it was dark, I rowed it to our ship and I quietly climbed onto it. Were there any pirates on the ship? Fortunately, there was only one pirate, who was hurt. I
 100 helped him and then he helped me sail the ship to the north coast of the island, which was near the citadel.

When I got to the citadel, my friends were not there. Suddenly, Long John Silver
 105 caught me. The pirates were in the citadel! They had the map because Dr Livesey had given it to them! Why did he do that? A few hours later, Dr Livesey arrived and helped the hurt pirates.
 110 I didn't understand what was happening. Long John Silver wanted to dig up the treasure. Dr Livesey whispered to me that

everything was all right. He told me that Mr Trelawney and our friends were safe.
 115 Long John Silver and the pirates followed the map to the treasure. They tied ropes round our hands and made us go with them. However, when we arrived at the place we saw a big hole: somebody had taken the
 120 treasure. The pirates began to fight and they fell into the deep hole and they couldn't get out. Hurrah!

Dr Livesey and I ran away quickly.
 We went to Ben Gunn's cave where Mr

125 Trelawney and the others were waiting for us. Ben had lived there all the time and he had all the treasure there. Ben had told Dr Livesey this so the doctor gave the map to the pirates. The map didn't help the pirates because Ben Gunn had the treasure!

130 We took all the treasure to the ship and sailed back to England. Ben Gunn was very pleased to be back home – and so were we! We all took some gold home. My mother

135 was very pleased to see us!



TREASURE ISLAND ACTIVITIES

In groups discuss the following questions.

- 1 Suggest another title for the story reflecting its theme.
- 2 What kind of character would you describe Jim Hawkins to be?
- 3 Would you have taken the map and run away? Why? If not, what would you have done?
- 4 What do you think happened to the old seaman after he escaped?
- 5 Do you think it was a good idea to show the map to Mr Trelawney and Dr Livesey? Why?
- 6 Fill in the following table with information about the story.

Title	_____
Characters	_____, _____
Setting (time, place)	_____; _____; _____
Events	1. _____ 2. _____ 3. _____ 4. _____ 5. _____

- 7 In pairs, discuss what you would have done if you were stuck on an island alone for a very long time.
- 8 What would you do with the treasure if you were the one who found it? Would you share it, save it or spend it all? Discuss your choices in groups.
- 9 Write instructions for finding some hidden treasure. Draw a map to make the instructions clearer.

1 Abbas Ibn Firnas



One morning in 852 CE, a man climbed to the top of a minaret of a large mosque in Cordoba. He was wearing a cloak with pieces of wood attached. The crowd that had gathered below were eagerly watching and waiting to see what would happen. The minaret shone in the sun and the crowd fell silent as the man stretched open his arms and prepared to jump.

The man was Abbas Ibn Firnas and he was attempting to fly. He was already well known as a poet, astronomer, musician, engineer, scientist and inventor. He was determined to find a way to fly, and spent many years thinking up designs for wings to help him take flight. He had already tried to fly over the desert, and hoped to fly successfully in Cordoba.

The crowd held its breath as Firnas launched himself into the air. He flapped his arms frantically up and down. 'He's falling!' shouted one man in the crowd, and true enough, Firnas began to fall quickly to the ground like a bird with an injured wing. The look of wonder on the faces of the crowd quickly turned to horror. However, as he fell, his cloak spread out like a parachute and slowed his fall. The crowd rushed to help him. Firnas was shaken but not badly hurt. 'Next time I will fly,' he said.

Firnas was a brave man and, despite this failed attempt, he was determined to try again. 'There must be a way,' he thought. 'Birds can fly. Why can't I?' So, for several years, Firnas worked on improving his design. Finally, his new flying machine was ready. The wings were made of silk and eagle feathers. This time, the nearly 70-year-old Firnas climbed to the top of a mountain in Cordoba that looked out over the city. Once again there was an audience who had gathered to watch him. Firnas was nervous. Were the wings strong enough to carry his weight? Would he really fly? He checked the wings carefully for the last time. Then he looked up at the sky, took a deep breath and leapt into the air.

There was a moment's silence and then a cry went up, 'He's flying!' Firnas was flying. He was soaring like a bird! Minutes passed and still he flew – high above the ground, high above the people cheering below. A full ten minutes went by, but suddenly, Firnas felt himself falling. There was no power in the wings and he started to fall. He landed heavily on the ground. The wings were broken and his back was badly hurt. 'I know what I did wrong,' he thought. 'I didn't make a tail!'

Firnas realised, too late, that birds use their tails to help them land safely. Even so, his flying machine was the first to support a person in the air and he became the first man to try to fly in a scientific way. Firnas's discovery about the role of the tail is still very important – even today. Watch any plane land. You will see that their back wheels touch the ground first.

ABBAS IBN FIRNAS ACTIVITIES

In groups discuss the following questions.

- 1 Suggest another title for the story about Abbas Ibn Firnas.
- 2 What kind of character would you describe Firnas to be?
- 3 Would you have the courage to fly just as Firnas did in a scientific way? Justify your answer.
- 4 Firnas had tried to fly many times over different places. Name the three places that the story mentions and put them in chronological order in the following timeline.

- 5 Research other people than Firnas who attempted to fly in their own way, or who designed a flying device, and complete the following table. Tell the class about one of these people.

Name of person	Name of flying device	Is this device used today for flying?
1 Abbas Ibn Firnas	a clock with pieces of wood silk and eagle feathers	no

2 Al Jazari



In a small workshop in the city of Diyarbakir in South East Turkey, a man stands before a model wooden elephant. He is looking at a bowl floating on top of a large container of water inside the elephant. There is a small hole in the bowl and, as the minutes pass, the bowl gradually fills with water and slowly sinks. The man is watching carefully as this happens and he smiles as the bowl reaches the bottom.

The man is the engineer and craftsman Al Jazari and he is the inventor of wonderful mechanical devices, such as this amazing elephant clock. The device is based on water technology devised by the Ancient Greeks. The moment the bowl touches the bottom, the tuneful notes of a bird ring out from the top and a small Arabian figure starts to move. The whole mechanism is cleverly controlled by water and weights. The bowl pulls ropes as it moves down and a ball is released every half an hour. But the water clock does more than tell the time: it is testament to the diverse nature of mankind as well as

the importance of, and developments in, the Islamic world. The elephant represents India, the fire-breathing dragon depicts

China and a phoenix symbolises Egypt. A Persian carpet, intricately woven, hangs over the elephant's back. The whole device is a delight to the ear and the eye of this master craftsman. Al Jazari is pleased with his invention.

It is perhaps the best, most creative device he has ever invented – and there have been many. Born in Turkey in the twelfth century, Al Jazari spent his whole

life devising mechanical devices that revolutionised engineering. Many of them were inspired by Ancient Greek and Indian technology. He was an outstanding engineer and his elephant clock with its

moving figures is the first example of robotics. We can read about his many inventions in the popular book he wrote in 1206 CE called *The Book of Knowledge of Ingenious Mechanical Devices*. In

this book, he describes fifty mechanical inventions, including many water clocks. His castle clock, an elaborate water-powered astronomical clock that was 3.4 metres high, displayed moving models of the sun, the moon and the stars. Al Jazari also created candle clocks.

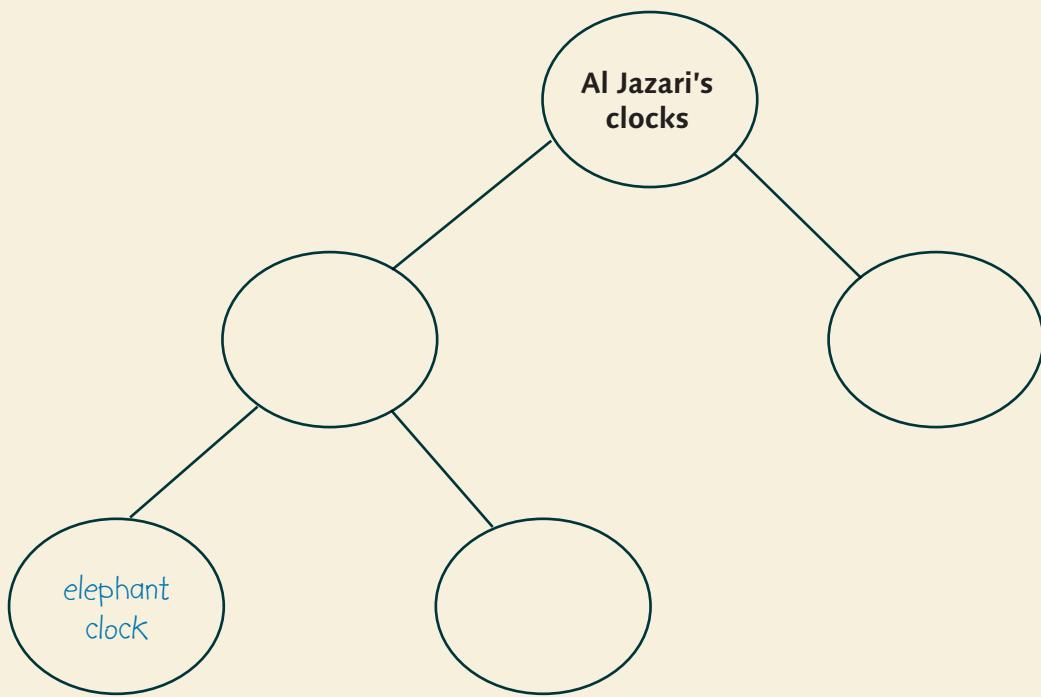
Today, Al Jazari's remarkable elephant clock can be seen in different shapes and forms in many places around the

world and he is considered by many as a mechanical genius.

AL JAZARI ACTIVITIES

In groups discuss the following questions.

- 1 Suggest another title for the story about Al Jazari.
- 2 What kind of character would you describe Al Jazari to be?
- 3 If you had the chance to invent a clock similar to the elephant clock, what would you replace the elephant, the dragon, the phoenix and the carpet with? What would the objects you chose represent? Tell the class about your invention.
- 4 What types of clock did Al Jazari invent? Complete the following diagram.



- 5 Research places where visitors and tourists can see a modern-day model of the elephant clock.