

Weird news



A flock of flamingoes in the Gulf of Mexico
Photograph by Robert B. Haas

FEATURES

94 Nature's mysteries

An explanation of strange phenomena in the natural world

96 Desert art

An article on the mysterious Nasca lines in Peru

98 Lost and found? The missing pilot

Current theories about Amelia Earhart's disappearance

102 Killer bees

A video about an invasion of bees in Latin America

1 Work in pairs. Look at the photo. What is unusual about it?

2 **2.8** Listen to two people discussing the photo. What or who do the words in bold in their comments refer to?

- 1 If you look closely you can make **them** out.
- 2 **That's** too much of a coincidence.
- 3 I've seen **this sort of thing** before.
- 4 I think **it's** genuine.
- 5 You can see where **he** has added more flamingos.
- 6 Look at **the ones** at the top.

3 **2.8** Listen again. Answer the questions.

- 1 What does the man think the photo shows?
- 2 What does the woman think has happened to the photo?
- 3 Which person accepts the other's viewpoint?
- 4 Which speaker do you agree with? Why?

4 Work in groups. The woman speaker thinks the image is fake. Have you ever been tricked by anything fake? How can you tell if these things are fake or genuine?

jewellery money paintings passports watches

Lead-in

Personal response

Ask students to think of a photograph that they own or that they have taken which is special to them, and describe their photos in pairs or in small groups.

1 Ask students to discuss the question in pairs.

2 **2.8** Ask students to read the sentences and check any new words, then listen and note down what or who the words in bold refer to.

ANSWERS

- 1 the flamingoes
- 2 that they form this shape
- 3 similar trick photography
- 4 the photograph
- 5 the photographer
- 6 the flamingoes

3 **2.8** Ask students to read the questions, then listen again and answer them.

ANSWERS

- 1 A flock of birds in the shape of a flamingo
- 2 She thinks it has been changed to make the bird shape.
- 3 The woman
- 4 Students' own answers

4 Students discuss the questions in groups.

Nature's mysteries

Lead-in

Personal response and introducing the theme

Write the following animals on the board: *bats, whales, snakes, spiders*. Tell students that you are going to award one of these animals an award for the most mysterious animal.

Divide the class into four groups and 'give' each group one of the four animals. Each group must think of five reasons why their animal should win the award. After each group has presented their reasons, tell the class which animal you will give the award to.

Vocabulary and listening the natural world

1 Ask students to look at the four photos, and work in pairs to discuss what they think they are, using the prompts. Elicit suggestions from the class.

Vocabulary notes

It looks like a (+ noun) = It has a similar appearance to ...

It reminds me of a (+ noun) = It makes me remember or think about ...

2 Ask students to complete the sentences with the words. Tell them to use dictionaries if they need to check the meanings.

ANSWERS

- 1 Nitrogen / oxygen, atmosphere
- 2 butterflies / flies, insect
- 3 Radiation
- 4 Ants / beetles
- 5 stem
- 6 Particles
- 7 Predators, species
- 8 spikes

Extra activity

Drill the words in the box for pronunciation before students listen to the recording. Pay attention to the strong stress. Note that it falls on the first syllable in all the words except *radiation*.

3 [2.9] Tell students they will hear three clips which describe the photos. They should listen and write the number of the clip next to the words in the box in Exercise 2. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- Clip 1: atmosphere, nitrogen, oxygen, particles, radiation
 Clip 2: ants, butterflies, predators, stem
 Clip 3: ants, beetles, flies, insect, spikes

8a Nature's mysteries



Vocabulary and listening the natural world

1 Work in pairs. You are going to listen to some audio clips from a website about mysteries in nature. Look at the photos from the website. Discuss the photos with your partner.

It looks like (a) ...

It reminds me of (a) ...

2 You will hear these words in the audio clips. Work in pairs. Complete the sentences with these words.

ants	atmosphere	beetles	butterflies	flies	insect
nitrogen	oxygen	particles	predators	radiation	
stem	species	spikes			

- 1 _____ and _____ are gases which exist in the Earth's _____.
- 2 Both _____ and _____ are types of flying _____.
- 3 _____ is the name for energy in the form of rays or waves.
- 4 _____ and _____ live on the ground and in soil.
- 5 Leaves and flowers grow from the main _____ of a plant.
- 6 _____ are tiny pieces of material.
- 7 _____ are things which catch and eat other _____.
- 8 Some plants have long, sharp _____, like needles.

3 [2.9] Listen to the audio clips. Write the number of the clip (1–3) next to the words in Exercise 2.

4 [2.9] Listen to the clips again. Are the sentences true (T) or false (F)?

- 1 The colours are man-made lights.
- 2 The colour of the lights depends on the amounts of oxygen and nitrogen.
- 3 The orange ball is a butterfly egg.
- 4 The image uses a technique called macro photography.
- 5 Some plants can actually chase and catch insects.
- 6 The Australian sundew plant traps flies on its sticky spikes.

5 What can you remember? Can you answer the questions? Test your partner.

- 1 What are the lights in the sky?
- 2 Why might butterflies lay eggs in places like this?
- 3 How do some plants catch animals?

4 [2.9] Give students a moment to read through the sentences first. Play the recording again. Students listen and decide if the sentences are true or false.

ANSWERS

- 1 F (they are completely natural)
- 2 T 3 T 4 T
- 5 F (they can't move and chase after things) 6 T

5 Students discuss the questions in pairs.

ANSWERS

- 1 The result of particles in the Earth's atmosphere colliding with each other.
- 2 To keep their eggs away from predators like ants on the ground.
- 3 They attract them by looking like something else – like water drops, for example.

Extra activity

Ask students to read the audioscript and underline expressions they aren't sure of. You could check the following:

at certain times of the year, vivid, and yet, have ... significance, speculated, a form of, (so what) exactly, the result of, colliding with, mainly, on the other hand, (the amount of) detail, incredible, a close up, lay eggs, spot, keep st safe from st, indeed, chase, take this ..., shiny, get a nasty surprise, dissolve, sticky

Grammar modal verbs (2)

6 Ask students to read the four sentences 1–4 and underline the modal verb in each sentence. Then ask them to match the sentences to their uses.

Grammar modal verbs (2)

- 6 Match these sentences (1–4) from the audio clips with their uses (a–d).
- The colours are so vivid, like neon street signs, that you think they can't be natural.
 - You imagine that they must be man-made.
 - This might be a painting or a work of art.
 - It may not seem logical, but there are indeed plants that catch insects.
- a The speaker is certain something is true.
 b The speaker is certain something is not true.
 c The speaker thinks it's possible something is true.
 d The speaker thinks it's possible something is not true.

SPECULATION AND DEDUCTION ABOUT THE PRESENT

must	+ infinitive
might (not) / may (not) / could	+ be + -ing
can't	

For further information and practice, see page 166.

- 7 Look at the grammar box. Underline other verb forms from the box in the audioscript on page 178.
- 8 Read the text *Navigation in nature*. Cross out any options which are not possible.

Word focus look

- 9 Can you match the two parts of these sentences from the audio clips? Check your answers in the audioscript on page 178. Underline another expression with *look* which means the same as item 1.
- The sky looks as though
 - The sky looks
 - The shiny drops look like
 - Look
- a carefully.
 b water.
 c it's on fire.
 d green.
- 10 Complete the sentences with an expression with *look* from Exercise 9.
- You _____ great! Are you going somewhere special?
 - Have you seen what Mark's wearing today? He _____ a model!
 - Joe _____ he hasn't slept all night.
 - You _____ angry! What's the matter?
 - You _____ you've had some good news.
 - I'll need to _____ closely at this contract.

Speaking

- 11 Work in two pairs within a group of four. You are photo editors at a magazine. You can't find the correct captions for your photos. Describe your photos to the other pair and find the correct caption.
- Pair A: Turn to page 153. Look at the photos and captions.
 Pair B: Turn to page 154. Look at the photos and captions.

- 8 Ask students to read the text quickly, then decide which options are not possible in the text. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- 1 **can't be** 4 **can't mean**
 2 **(both correct)** 5 **may be**
 3 **(both correct)**

Extra activity

Write the following nature problems on the board:

How do bats fly in the dark without hitting the walls?

How do cows digest grass?

How do whales communicate across long distances?

Ask students in pairs or small groups to discuss the problems. Tell them, if they don't know why, to speculate.

Homework

As a follow-up task for homework, ask students to research one of the 'problems' on the Internet and write up a report on how one of the animals solves the problem.

Word focus look

- 9 Ask students to match the sentence halves. Let them check their answers in the audioscript on page 178 of the Student's Book and tell them to find one further example.

ANSWERS

- 1 c 2 d 3 b 4 a
looks as if = looks as though

Vocabulary note

It *looks* (+ adjective) = It appears to be ...

It *looks like* (+ a noun) = It has a similar appearance to ...

It *looks as though / if* (+ clause) = It seems that ... (*looks like* + clause is used in a similar way in modern English)

In the expression *Look carefully* the verb *look* has a different meaning – it means observe.

Extra activity

Ask students to work out the form rules with *look* from the example sentences (e.g. *look* + adjective, *look like* + noun, etc). Then ask students to write more sentences to describe the pictures on page 94 of the Student's Book.

[continued on the next page]

NAVIGATION IN NATURE

Arctic terns (pictured) are among many animals that travel huge distances every year, returning to the same place each time. How do they find their way? Scientists believe that this ability ¹ *must be / can't be* instinctive in some animals, such as salmon, because they are not guided by a parent. They think that the fish ² *might recognise / could recognise* the smell of the river they came from. According to current theories, some migrating birds, like the tern, ³ *could use / may use* the Earth's magnetic field or the sun as a guide. Studies have shown that in some species, older birds are more successful navigators. This ⁴ *can't mean / could mean* that birds learn with experience or they react to weather conditions. In fact, instinct ⁵ *may be / can't be* the whole story: a flock of young geese once learned their migration route by following a human in a plane.



TALK ABOUT MISSING CAPTIONS SPECULATING ABOUT THE PAST GIVE YOUR OPINION SURPRISING NEWS
 WRITE A NEWS STORY

ANSWERS

- 1 **b (can't + infinitive)**
 2 **a (must + infinitive)**
 3 **c (might + infinitive)**
 4 **d (may not + infinitive)**

7 Ask students to read the grammar box in pairs and underline other uses of modals in the audioscript. In feedback, note the modals used to express ability: *obviously they can't move; so that it can 'eat' it*.

Refer students to page 166 of the Student's Book for further information and practice.

ANSWERS

See underlined phrases in the audioscript.

Grammar notes

When speculating, English uses *must* (+ infinitive) to say that something is certainly or highly likely to be true, and *can't* (+ infinitive) to say that something is certainly not or highly likely not to be true. There is an element of logical deduction in this speculation.

English uses *might*, *may* and *could* (+ infinitive) to say that something is possibly true. There is no real difference in meaning between the three modal verbs. It is possible to use *might* and *may* in negative forms (e.g. *He might not come to the party*), but it is not possible to use *could* in the negative form when speculating.

Pronunciation notes

Note that the modal verbs are usually strongly stressed. *Can't* is pronounced with a long /a:/ sound.

8b Desert art

10 Ask students to complete the sentences. Let them compare their answers in pairs.

ANSWERS

- 1 look
- 2 looks like
- 3 looks as though / if
- 4 look
- 5 look as though / if
- 6 look

Speaking

11 Divide the class into groups of four, divided into two pairs. Each pair must turn to the relevant page in the Student's Book and follow the instructions to speak about their photo.

Vocabulary history

1 Are you interested in history? Complete the questions with some of these words. Then work in pairs. Ask and answer the questions.

ancient	belief	century	period	prehistoric
sacred	society	tradition		

- 1 Do you enjoy visiting _____ monuments?
- 2 Which historical _____ would you like to live in?
- 3 What do the drawings in _____ cave art often show?
- 4 What do you think were the key historic events of the 20th _____?
- 5 Many historical sites had religious or _____ significance. Can you name any in your country?
- 6 Do you think we can learn from studying how _____ lived in the past?

Listening and reading

2 **2.10** Have you heard of the Nasca lines? Work in pairs. Try to answer the questions. Then listen to part of a radio programme. Check your answers.

- | | |
|-----------------------|----------------------------------|
| 1 What are they? | 6 How big an area do they cover? |
| 2 Where are they? | 7 How old are they? |
| 3 How big are they? | 8 What are they made of? |
| 4 What do they show? | |
| 5 How many are there? | |

I've never heard of them. But from the photo, they look as if they're drawings or something.

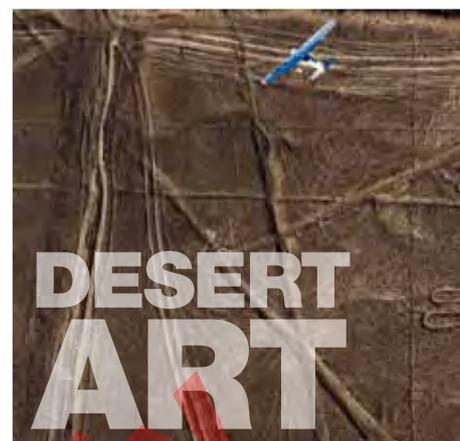
I think they might be in South America, but I'm not exactly sure.

3 Did any of the information in the programme surprise you? Is there any additional information you would like to know about the Nasca lines? Write two or three questions.

4 Read the article *Desert Art* and answer the questions. Does the article answer your questions from Exercise 3?

- 1 When did people 'discover' the Nasca lines?
- 2 What ideas did people have about the purpose of the lines?
- 3 Why was water important to Nasca society?
- 4 What is the current theory about the significance of the lines?

5 Why do you think people are so fascinated by the Nasca lines?



The mysterious desert drawings known as the Nasca lines have puzzled people since they first become widely known in the late 1920s. Before air travel in Peru began, it was impossible to get a clear view of the giant drawings of the spider, monkey and hummingbird. Yet the Nasca people who made these patterns 2,000 years ago couldn't have seen them from above.

One of the first formal studies of the lines was by Maria Reiche. She spent half a century working for their conservation and was convinced that the lines must have been part of an astronomical calendar. Other people thought they might have been ancient Inca roads or irrigation systems. The weirdest idea was that they could have been landing strips for alien spacecraft!

phenomenon (n) /fə'nɒmɪnən/ an event or fact
ceremonial (adj) /sə'reɪ'məʊniəl/ ritual and traditional

WORDBUILDING noun → adjective

We can make adjectives from nouns by changing the endings of the nouns.

mystery + -ous → mysterious
religion + -ous → religious
astronomy + -ical → astronomical
ceremony + -al → ceremonial

For further information and practice, see Workbook page 67.

8b

Desert art

Lead-in

Introducing the theme: history

Write *To me, history is ...* on the board. Ask students to complete the sentence any way they like. Divide the class into small groups to share their completed sentences, then have a whole class feedback and discuss what students think about history.

Possible sentences: *History is learning dates. History is finding out about our heritage. History is about understanding the present better. History is going to museums. History is boring.*

Vocabulary history

1 Ask students to complete the sentences. Divide the class into pairs. Ask students to take turns to ask and answer questions.

ANSWERS

- | | |
|---------------|-----------|
| 1 ancient | 4 century |
| 2 period | 5 sacred |
| 3 prehistoric | 6 society |

Fast finishers

Ask fast finishers to write two more questions using the other two words.

Extra activity

Brainstorm some of the key historical events of the 20th century and write them on the board. Ask students to order them from most to least important.

A possible list: the First World War; the Second World War; the dropping of the first atomic bomb; the founding of the United Nations; the Vietnam War; the fall of the Berlin Wall; the 9/11 attacks on New York

Listening and reading

2 **[2.10]** Divide the class into pairs. Ask students to look at the photo and discuss the questions. Then play the recording. Students listen and check their answers.

ANSWERS

- 1 enormous drawings on the ground
- 2 in the Nasca desert in southern Peru
- 3 huge – the biggest is about 200 metres across
- 4 geometric shapes; animal shapes such as a spider, birds, a monkey, and a dog; human figures
- 5 hundreds
- 6 about 500 square kilometres
- 7 about 2,000 years old
- 8 They were made by moving stones and revealing the white ground underneath.

3 Students discuss the questions, then write two or three additional questions they would like to ask.

4 Give students a moment to read through the questions and predict what the answers might be. Ask students to read the article and answer the questions. In feedback, find out whether the students found answers to their own questions.



Spider
Photograph by Robert Clark

This region of Peru is one of the driest places on Earth and yet successful societies, including the Nasca, lived here. Water must have had an incredible significance to these societies, so perhaps the lines were related to this. We know that the Nasca River, which comes down from the nearby mountains, runs underground for about fifteen kilometres before suddenly emerging on the surface again. This must have seemed an astonishing, even sacred, phenomenon to ancient societies. It has also become clear that there are many huge drawings in the area, not just the ones on the flat desert plain. Many are much older than the Nasca figures themselves, so the same group of people can't have created them. It now seems that the Nasca lines may have been part of a long tradition of ceremonial activities connected to water and religious beliefs.

Grammar modal verbs (3)

6 Look at the grammar box. Find and number eight sentences with these forms in the article.

SPECULATION AND DEDUCTION ABOUT THE PAST

<i>must</i>	<i>might / may / could</i>	<i>have</i>	+ past participle
<i>can't / couldn't</i>			

For further information and practice, see page 166.

7 Answer the questions about the sentences (1–8) in the article.

- Which sentences speculate about things which were possible?
- Which sentences express certainty about the explanations they give?
- Which sentences make a deduction based on logical information?

8 Rewrite the sentences about the Nasca using one of the words in brackets.

- We know water wasn't easy to find. (*can't / must*)
- It's possible the rivers dried up. (*might / may not*)
- There's no doubt the lines were very important. (*could / must*)
- Perhaps the lines had a religious significance. (*may / can't*)
- It isn't logical that the animal drawings were roads. (*might / couldn't*)
- Obviously the animals lived in the region. (*might / must*)
- One possibility is that the Nasca people used simple tools. (*could / must*)
- It seems clear that people maintained the lines carefully. (*might / must*)

9 2.11 Listen and check your sentences from Exercise 8.

10 **Pronunciation weak form of have**

- Look at the sentences you wrote in Exercise 8. Is the verb *have* the main verb or an auxiliary verb?
- Listen again. Is *have* pronounced /hæv/ or /həv/?

Speaking

11 Work in pairs. Why do you think the Nasca lines were created? What about other mysterious sites you have heard about?

12 Work in groups. Look at the list of things archaeologists have found. They all date from around 2,000 years ago – the same period as Nasca society. What do they say about how people lived then?

a leather sandal
a circle of 2m-high granite 'standing stones'
fragments of pottery with iron-based painted patterns
a metal pot containing cream with a fingerprint visible
pits dug in the ground, full of apricot and plum seeds
a bronze mirror in a grave
pots in the ground containing hundreds of coins
pieces of burnt animal bones

13 Tell the class your ideas. Which ideas are the most interesting?

Grammar modal verbs (3)

6 Ask students to look at the examples in the grammar box, and point out the form: modal verb + *have* + past participle.

Ask students to underline eight examples of the form in the text. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- The Nasca people ... couldn't have seen them ...
- the lines must have been part of an astronomical calendar
- they might have been ancient Inca roads
- they could have been landing strips for alien spacecraft!
- Water must have had an incredible significance
- This must have seemed an astonishing ... phenomenon
- the same group of people can't have created them
- Nasca lines may have been part of a long tradition

7 Ask students to look at the sentences they have underlined and discuss the questions in pairs.

ANSWERS

- Sentences 2, 3, 4, 5, 6 and 8 (from answer key above)
- Sentences 2, 5 and 6
- Sentences 1, 5, 6 and 7

8 and 9 [2.11] Ask students to rewrite the sentences. Let students check their answers in pairs before discussing as a class. Play the recording. Students listen and check their answers.

Pronunciation weak form of have

10 Ask students to look at the sentences and answer the question, then play the recording again for students to answer question b. Check that students recognise the form and pronunciation of *have* in these sentences.

ANSWERS

Have is an auxiliary verb. It is pronounced /həv/ in these sentences.

Grammar and pronunciation notes

When speculating about the past, the form of the sentence is like this:
modal verb + auxiliary *have* + past participle of the main verb

Animals might have lived here.

There is a strong stress on the modal and on the past participle, which means that the auxiliary verb is very weakly stressed. It links with the modal verb and reduces to a barely heard /əv/ sound, e.g. /mɑɪtəv/

[continued on the next page]

ANSWERS

- in the late 1920s
- an astronomical calendar; ancient Inca roads or irrigation systems; landing strips for aliens
- Because Peru was so dry that the emergence of water from the ground seemed sacred.
- The Nasca lines may have been part of a long tradition of ceremonial activities connected to water and religious beliefs.

Vocabulary notes

astonishing = very surprising

huge = very big

sacred = very religious

5 Elicit suggestions as a whole-class discussion. Read through the information in the *Wordbuilding* box with the class. Refer students to page 67 of the Workbook for further information and practice.

Background notes

The Nasca (or Nazca) lines were created by the Nasca people somewhere between 400 and 650 AD.

The Nasca culture flourished in southern Peru between 100 and 800 AD. Their culture is well-known for its ceramics and textiles as well as the lines. The dry, windless climate and remote location has helped preserve the lines.

Maria Reiche (1903–1998) was a German archaeologist who began researching the Nasca lines in 1940. She was active in trying to protect the lines from encroachment. The lines were declared a UNESCO World Heritage Site in 1995.

8c Lost and found?

Extra activity

Practise the weak pronunciation of *have* by asking students to listen to and repeat the sentences on the recording in Exercise 9.

Extra activity

Write the following questions on the board and ask students to speculate about them: *How did they build Stonehenge? What causes crop circles? Why is Mars red? How did the Egyptians build the pyramids?*

Speaking

11 Divide the class into pairs and ask them to speculate about why the Nasca lines were created. Monitor and note how well they use modal verbs.

12 Divide the class into small groups and ask them to read through the list carefully. Point out that all these items were found by archaeologists at or near the site of the Nasca lines. Check unknown words or ask students to check them in their dictionaries. Then ask students to prepare to speculate about the items.

Ask students to discuss what the items reveal about the lives of ancient people. Monitor and note how well students use the language of speculation.

Feed back on any errors you heard with the use of modals in the past.

Extra activity 1

Alternatively, ask students to work in pairs to do this exercise. Tell them to choose three things from the list in Exercise 12 and write a sentence for each one. They must use *must have / might have / couldn't have, etc.* Then ask students to stand up, walk round, and share their ideas with at least three other people in the class. Tell them to try to memorise the most interesting speculations and to tell their partner at the end. Pairs must agree on the most interesting idea they have heard and report back to the whole class.

Homework

Ask students to research an ancient site in their own country on the Internet. Ask them to write a short report about it in which they speculate about when, how and why it was created and who lived there and how they lived.

Reading

1 Work in pairs. The disappearance of Amelia Earhart is 'one of aviation's greatest unsolved mysteries'. Read the first article, *Where Is Amelia Earhart? Three Theories*, on page 99. Find out what people think happened to her. Compare your answers.

2 Read the second article on page 99 quickly. Answer the questions.

- Which of the three theories is the main article concerned with?
- Which modern scientific technique might hold the key to the Earhart mystery?
- If the project is successful, what will it prove?

3 Read the second article again. Answer the questions.

- What is Justin Long's connection to the project?
- Why can't the study use a sample of Earhart's hair?
- What is the biggest problem facing the researchers on the new project?

4 Find these words in the articles. Look at how the words are used and try to guess their meaning. Then replace the words in bold in the sentences with these words.

log profile funding reveal archive
assumption ensure identical

- The Science Council is **paying for** a study of wildlife in our area.
- The tests **show** that these bones are not human.
- The museum has a **huge collection of documents** on the early days of flight.
- We need to **make certain** that our results are correct.
- The investigation is based on the **theory** that the sample is big enough.
- Detectives often build up a **description** of a suspected criminal.
- These two samples are **exactly the same**.
- The visitor **register** recorded twenty visitors yesterday.

5 Work in pairs. Complete the summary.

The new project aims to provide a way of testing ¹ The success of the project depends on several things. Firstly, that the bone is from a ², not a turtle. Secondly, that Earhart's saliva still exists on ³ And thirdly, that there is enough saliva to ⁴

Critical thinking opinion or fact?

6 Read the definitions of *opinions* and *facts*. Then decide if the sentences from the articles are opinion (O) or fact (F).

Opinions are things people believe to be true. They can be a personal point of view or something that many people think.

Facts are items of information that we can check, prove or disprove.

- Amelia Earhart [...] was attempting a round-the-world flight in 1937.
- Earhart could have landed on a different island.
- According to Justin Long, Earhart's letters are the only items that are both verifiably hers and that might contain her DNA.
- A 2009 study revealed that the sample [of hair] was actually thread.
- Some scientists have suggested the Nikumaroro bone fragment isn't human at all.
- About 99 per cent of the nuclear genome is identical among all humans.

7 Find another fact and another opinion in the second article.

Speaking

8 Work in groups. Discuss your answers to the questions.

- Why do you think Justin Long is involved in the project?
- The bone fragment 'might have been from one of Earhart's fingers'. What other possibilities exist?
- Is it certain that any saliva on the envelopes is Earhart's? Why? / Why not?
- Do you think the project will be successful? Why? / Why not?

In my opinion, Justin Long is involved because his grandparents were interested in Amelia Earhart.

98

8c

Lost and found?

Lead-in

Introducing the theme: Amelia Earhart

Ask students to look at the photograph and the headline. Ask: *What do you know about Amelia Earhart?* Elicit information from the class and summarise it on the board under two headings: *Facts* and *Guesses*. Encourage students to use the language of speculation to make guesses. Ask students to think of two or three things they would like to find out about Amelia from reading the text.

Reading

1 Ask students to read the first article and find out what the three theories about Amelia Earhart's disappearance are. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- Earhart ran out of fuel and crashed in the Pacific Ocean. (official theory)
- Earhart could have landed on a different island, called Nikumaroro, and subsequently died since the island is uninhabited.
- Earhart was captured while on a secret mission to the Japanese-controlled Marshall Islands in the North Pacific and eventually returned to the USA with a new identity.



Where is Amelia Earhart?

Three Theories

By Ker Than for National Geographic News

Amelia Earhart, the first woman to fly solo across the Atlantic Ocean, was attempting a round-the-world flight in 1937. She planned to land on the tiny Pacific Ocean island of Howland just north of the equator. She never arrived. Her fate, and that of her navigator Fred Noonan, remains one of aviation's greatest unsolved mysteries. Researchers have spent millions of dollars investigating the case and several books have been published that examine the differing theories.

The official US position is that Earhart ran out of fuel and crashed in the Pacific Ocean. The radio log from a US Coast Guard ship indicates that she must have been near Howland when contact was lost.

Another theory says that Earhart could have landed on a different island, called Nikumaroro, and subsequently died since the island is uninhabited.

Yet another theory claims she was captured while on a secret mission to the Japanese-controlled Marshall Islands in the North Pacific and eventually returned to the USA with a new identity.

Lost and found? The missing pilot

18 February 2011

Amelia Earhart's dried saliva could help solve the longstanding mystery of the aviator's 1937 disappearance, according to scientists who plan to take samples of her DNA from her correspondence. A new project aims to create a genetic profile that could be used to test recent claims that a bone found on the South Pacific island of Nikumaroro is Earhart's.

Justin Long, a Canadian whose family is partially funding the DNA project, points out that at the moment, anyone who finds fragments of bones can claim that they are Amelia Earhart's remains. Long, an internet-marketing executive, is the grandson of 1970s aviator Elgen Long, who with his wife wrote the 1999 book *Amelia Earhart: The Mystery Solved*. According to Justin Long, Earhart's letters

are the only items that are both verifiably hers and that might contain her DNA. Hair samples are one of the best sources of a person's DNA, but no hair samples from Earhart are known. There was, in theory, a sample of Earhart's hair in the International Women's Air and Space Museum in Cleveland, USA. However, a 2009 study revealed that the sample was actually thread.

The remains of Earhart, her navigator Noonan, and their twin-engine plane were never recovered. But in 2009, researchers with the International Group for Historic Aircraft Recovery found a bone fragment on Nikumaroro, which they believed might have been from one of Earhart's fingers. However, some scientists have suggested the Nikumaroro bone fragment isn't human at all but may instead belong to a sea turtle which was found nearby.

The new Earhart DNA project will be headed by Dongya Yang, a genetic archaeologist at Simon Fraser University

in Canada. Yang will work on four letters Earhart wrote to her family, out of more than 400 letters in the Earhart archive. Much of Earhart's correspondence was dealt with by her secretary. However, with the four personal letters, the assumption is that Earhart must have sealed the envelopes herself.

Meanwhile, geneticist Brenna Henn of Stanford University, USA said she knows of no other case where DNA has been collected from decades-old letters. But she said Yang's methodology 'sounds reasonable'. The problem is that about 99 per cent of the genome is identical among all humans. If the team obtains little material, they have almost no power to discriminate between Earhart's DNA and that of other living people. To ensure that the DNA from the letters indeed belonged to Earhart, the team will compare it to DNA from Earhart's still-living relatives and also DNA extracted from another letter, written by Earhart's sister.

genome /ˈdʒiːnəʊm/ the genetic information of each living thing
saliva /səˈlɪvə/ the liquid normally in your mouth

TALK ABOUT ▶ MISSING CAPTIONS ▶ SPECULATING ABOUT THE PAST ▶ GIVE YOUR OPINION ▶ UNRISNING NEWS
 WRITE ▶ A NEWS STORY

Vocabulary notes

fly solo = fly alone

fate = what happened to her

saliva = liquid in the mouth

longstanding = lasting a very long time

fragments = small pieces

verifiably = can be tested and proved

5 Divide the class into pairs. Ask students to work together to complete the summary. Point out that various answers are possible.

SAMPLE ANSWERS

- 1 claims / theories
- 2 human
- 3 envelopes
- 4 give a DNA sample

Critical thinking opinion or fact?

6 Read through the definitions with the class. Divide the class into pairs to discuss whether the statements are opinions or facts.

ANSWERS

- | | | |
|-----|-----|-----|
| 1 F | 3 O | 5 O |
| 2 O | 4 F | 6 F |

7 Ask students to find another fact and another opinion in the article.

SAMPLE ANSWERS

A new project aims to create a genetic profile ... (fact)

Justin Long's ... family is partially funding the DNA project (fact)

... claims that a bone found on the South Pacific island of Nikumaroro is Earhart's. (opinion)

... which they believed might have been from one of Earhart's fingers. (opinion)

Speaking

8 Ask students to discuss the questions in small groups.

Homework

Ask students to write an essay summarising the various theories about why Amelia Earhart disappeared, and saying what they think must have happened.

2 Ask students to read the second article and answer the questions. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- 1 the theory that Earhart landed on Nikumaroro
- 2 DNA sampling
- 3 It will prove where Earhart crashed.

3 Ask students to read the text again and answer the questions. Let them compare their answers in pairs before discussing as a class.

ANSWERS

- 1 His family is partially funding the DNA project.
- 2 No hair samples from Earhart are known.
- 3 About 99 per cent of the genome is identical among all humans, so the team needs to have enough material to show that the DNA belongs to Earhart and nobody else.

4 Ask students to find the words in the texts and underline them, then try to guess the meaning from the context. Then ask them to rewrite the sentences in the exercise using these words. Let students compare their answers in pairs before discussing as a class.

ANSWERS

- | | |
|-----------|--------------|
| 1 funding | 5 assumption |
| 2 reveal | 6 profile |
| 3 archive | 7 identical |
| 4 ensure | 8 log |

Teaching notes

Guessing words in context is a useful skill which is practised in Exercise 4. When students have underlined the words in the texts, ask them to say what part of speech each word is and to say how they know from the context. Then, ask them to look at the words around the underlined words and to say how these words help them to work out the meaning.

You must be joking!

Lead-in ideas

Personal response

Write the following headlines on the board:

- 1 *Stolen Painting Found By Tree*
- 2 *Include Your Children When Baking Cakes*
- 3 *Red Tape Holds Up New Bridge*

Tell students that the headlines are genuine but funny. Ask them to work in pairs and see if they can work out why they are funny.

Answers: 1 means that the painting was found near a tree, but it *could* mean that the tree found it. 2 means that when you bake you should include your children in the experience, but it *could* mean that you should put them in the cakes. 3: *red tape* means 'complicated bureaucracy', so it means that the building of the bridge is being delayed by bureaucracy, but it *could* mean that the bridge is being supported by red-coloured tape.

Real life reacting to surprising news

1 [2.12] Ask students to read the headlines. Check any difficult vocabulary (see below). Then ask: *Are any of the headlines surprising? Why?*

Play the recording. Students listen and choose the best headline for each of the three items.

ANSWERS

- 1 b 2 a 3 b

Vocabulary notes

take over = take control of

alert = warning

slashed = reduced in a dramatic way

Note the style in headlines. The present simple is used when talking about the past (*Sheep take over park*), the passive is used and reduced by removing the auxiliary verb (*Petrol prices have been slashed*), and the infinitive is used to express the future (*Fuel prices are going to double*).

2 Divide the class into pairs. Ask them to discuss the answers.

ANSWERS

- Story 1: 1 Sheep are reflecting the sun back into the atmosphere because they are white.
2 No 3 April 1st
- Story 2: 1 Blue 20 euro notes are forged.
2 Yes 3 April 1st
- Story 3: 1 Petrol prices have halved, so the girl has filled her dad's car with petrol – but it's a diesel car.
2 Yes 3 April 1st

8d You must be joking!

Real life reacting to surprising news

1 [2.12] Listen to three conversations about news items. Choose the best headline (a–b) in each case.

- 1 a ESCAPED SHEEP TAKE OVER LONDON PARK
b SHEEP IN GLOBAL WARMING SHOCK
- 2 a FORGED BANK NOTES ALERT
b USA TO JOIN THE EURO ZONE
- 3 a FUEL PRICES TO DOUBLE NEXT WEEK
b PETROL PRICES SLASHED

2 Can you remember? Answer the questions for each story.

- 1 What is the problem?
- 2 Does the second speaker believe the first speaker?
- 3 What is the date?



3 [2.12] Look at the expressions for reacting to news. Listen to the conversations again. Put the expressions in order (1–9).

▶ REACTING TO SURPRISING NEWS

Are you serious?
Are you sure?
Come off it!
Oh yeah?
Really?
That can't be right!
They must have made a mistake.
You must be joking!
You're having me on!

4 April Fools' Day (1 April) is a day when people play tricks on each other in many countries. Do you do anything similar in your country?

5 Pronunciation showing interest and disbelief

a [2.13] Listen to these expressions for reacting to news. Notice how the speaker's intonation rises to show interest and falls to show disbelief. Repeat the expressions.

- 1 Oh yeah?
- 2 Come off it!

b Work in pairs. Take turns to respond to these statements.

- 1 I'd love to go travelling round the world.
- 2 A meteorite has crashed to Earth in the middle of London.
- 3 I found a wallet full of money in the street this morning.
- 4 Biologists have discovered a parrot that can speak three languages.
- 5 I'm starting a new job tomorrow.
- 6 Work in pairs. Choose one of the other April Fools' Day headlines from Exercise 1. Decide what the hoax is. Make notes about the main points of the story. Invent as many details as you wish. Practise telling the story with your partner.
- 7 Work with a new partner. Take turns to listen and react to your stories. Use the expressions for reacting to news to help you.

TALK ABOUT ▶ MISSING CAPTIONS ▶ SPECULATING ABOUT THE PAST ▶ GIVE YOUR OPINION ▶ SURPRISING NEWS
WRITE ▶ A NEWS STORY

3 [2.12] Play the recording again. Students listen and put the expressions in the order they hear them. Check that students are clear about how the phrases are used.

ANSWERS

- 1 Oh yeah?
- 2 Come off it!
- 3 You're having me on!
- 4 That can't be right!
- 5 You must be joking!
- 6 Are you sure?
- 7 They must have made a mistake.
- 8 Really?
- 9 Are you serious?

Vocabulary notes

These expressions can be divided into two categories

- 1 I don't believe you are telling the truth:
Come off it! Oh yeah? Really? You must be joking! You're having me on!
- 2 I think the news must be wrong in some way:
Are you serious? Are you sure? That can't be right! They must have made a mistake. Really? (with a different intonation pattern)

Extra activity

Write the two headings (1 and 2) in the Vocabulary notes above on the board. Ask students in pairs to categorise the expressions from the box under the headings.

8e In the news

Writing a news story

1 Work in pairs. Read the news story. Do you think it is true or not? Explain your reasons to your partner.

2 Writing skill structuring a news story

a Read the introductory sentence in the news story again. Answer the questions.

- 1 What happened?
- 2 Who was involved?
- 3 Where did it happen?

b Read the main paragraph and find:

- 1 how the woman cut the cable.
- 2 four things that happened after she cut the cable.
- 3 two pieces of background information.

c Read the main paragraph again. How are the events and background details organised?

3 Vocabulary -ly adverbs in stories

a Find these adverbs in the story. Then match the adverbs with their meanings.

Adverbs

accidentally unfortunately temporarily
immediately apparently

Meanings

at once by mistake for a short time
it seems that we are sorry to say

b Cross out any options which are not possible.

- 1 *Apparently, / Quickly*, this type of incident is increasing in Georgia.
- 2 *Fortunately, / Incredibly*, nobody was hurt.
- 3 Internet services were *amazingly / gradually* restored across the region.
- 4 *Coincidentally, / Rapidly*, Internet services also failed in other regions last week.
- 5 Software providers say hackers *deliberately / sadly* sabotaged the service.
- 6 *Hopefully, / Slowly*, the police will release the woman because of her age.

c Work in pairs. Decide which of the sentences in Exercise 3b fit into the story and where they fit.



GEORGIAN WOMAN CUTS OFF WEB ACCESS TO WHOLE OF ARMENIA

An elderly Georgian woman has accidentally cut through an underground cable and cut off Internet services to all of neighbouring Armenia.

The woman, 75, was digging for metal near the Georgian capital Tbilisi and her spade damaged the fibre-optic cable. Unfortunately, Georgia provides 90 per cent of Armenia's Internet. Web users in the nation of 3.2 million people were left twiddling their thumbs for up to five hours. Large parts of Georgia and some areas of Azerbaijan were also temporarily affected. The damage was detected by a system monitoring the fibre-optic link and a security team went immediately to the spot. The cable is protected, but apparently landslides or heavy rain may have left it exposed on the surface. The woman, called 'the spade-hacker' by local media, was arrested on suspicion of damaging property. She faces up to three years in prison.

4 You are going to write a hoax story or an April Fool story. This can be invented or it can be a story you have heard. First, make notes about the main events and the background details of the story. Think about *what? who? where?* and also *why?* and *how?*

5 Write an introductory sentence to summarise the story. Then number your notes in the order you will write about them. Include at least three adverbs where appropriate.

6 Write your story in about 150–200 words. Write an interesting headline.

7 Work in pairs. Exchange stories. Use these questions to check your partner's story.

- Did the headline make you interested in reading the story?
- Are the facts of the story clear?
- Do you think the story is true?

TALK ABOUT ▶ MISSING CAPTIONS ▶ SPECULATING ABOUT THE PAST ▶ GIVE YOUR OPINION ▶ SURPRISING NEWS

WRITE ▶ A NEWS STORY

101

Only

4 Divide the class into small groups. Ask them to discuss what people do on April Fools' Day in their country.

Pronunciation showing interest and disbelief

5a [2.13] Play the recording. Students listen and notice the rising and falling intonation. Check the answers, then play the recording again. Students listen and repeat.

Pronunciation notes

A sharply rising intonation pattern shows interest – the sharper it rises the more interested the speaker.

A falling intonation pattern shows doubt or disbelief.

5b Students take turns saying and responding to the statements, paying attention to the intonation.

6 Ask students in pairs to choose one of the headlines in Exercise 1 that didn't match the recording. They must create the story of the hoax and practise telling it.

7 Students work with a new partner and take turns to tell their stories.

Homework

Give students other headlines to write hoax stories about:

New photos of Loch Ness monster

Killer bees move north across the USA – thousands dead

Spaghetti tree harvest in Italy hit by bad weather

In the news

Lead-in

Introducing the theme: news

Write down three short headlines from today's news on the board. They could be local, national or international news, depending on the interests of your students.

Ask students in pairs to tell each other what the news stories are about. If they don't know, ask them to guess what the story might be. In feedback, ask what the big headline stories in the students' countries are currently.

Writing a news story

1 Ask students to read the story and tell their partners whether they believe it or not.

ANSWER

It is a true story.

Vocabulary notes

twiddling their thumbs = having nothing to do

monitoring = watching or checking carefully

Writing skill structuring a news story

2a Ask students to reread the first sentence of the news story and answer the questions.

ANSWERS

- 1 A woman accidentally cut through an underground cable.
- 2 an elderly Georgian woman
- 3 in Georgia

2b Ask students to read the main paragraph and answer the questions.

ANSWERS

- 1 She was digging for metal when her spade damaged the fibre-optic cable.
- 2 Internet services to Armenia were cut off. A monitoring system detected the damage. A security team went to the spot. The woman was arrested.
- 3 The woman was digging for metal. Georgia provides 90 per cent of Armenia's Internet. The cable is protected, but apparently landslides or heavy rain may have left it exposed on the surface.

2c Ask students to read the text and notice how the events and background details are organised.

ANSWERS

The main events are in chronological sequence. Background information is inserted after the main event.

8d You must be joking!

Real life reacting to surprising news

1 2.12 Listen to three conversations about news items. Choose the best headline (a–b) in each case.

- 1 a ESCAPED SHEEP TAKE OVER LONDON PARK
b SHEEP IN GLOBAL WARMING SHOCK
- 2 a FORGED BANK NOTES ALERT
b USA TO JOIN THE EURO ZONE
- 3 a FUEL PRICES TO DOUBLE NEXT WEEK
b PETROL PRICES SLASHED

2 Can you remember? Answer the questions for each story.

- 1 What is the problem?
- 2 Does the second speaker believe the first speaker?
- 3 What is the date?



3 2.12 Look at the expressions for reacting to news. Listen to the conversations again. Put the expressions in order (1–9).

▶ REACTING TO SURPRISING NEWS

Are you serious?
Are you sure?
Come off it!
Oh yeah?
Really?
That can't be right!
They must have made a mistake.
You must be joking!
You're having me on!

4 April Fools' Day (1 April) is a day when people play tricks on each other in many countries. Do you do anything similar in your country?

5 Pronunciation showing interest and disbelief

a 2.13 Listen to these expressions for reacting to news. Notice how the speaker's intonation rises to show interest and falls to show disbelief. Repeat the expressions.

- 1 Oh yeah?
- 2 Come off it!

b Work in pairs. Take turns to respond to these statements.

- 1 I'd love to go travelling round the world.
- 2 A meteorite has crashed to Earth in the middle of London.
- 3 I found a wallet full of money in the street this morning.
- 4 Biologists have discovered a parrot that can speak three languages.
- 5 I'm starting a new job tomorrow.
- 6 Work in pairs. Choose one of the other April Fools' Day headlines from Exercise 1. Decide what the hoax is. Make notes about the main points of the story. Invent as many details as you wish. Practise telling the story with your partner.
- 7 Work with a new partner. Take turns to listen and react to your stories. Use the expressions for reacting to news to help you.

100

TALK ABOUT ▶ MISSING CAPTIONS ▶ SPECULATING ABOUT THE PAST ▶ GIVE YOUR OPINION ▶ SURPRISING NEWS
WRITE ▶ A NEWS STORY

Vocabulary -ly adverbs in stories

3a Ask students to read the text again and find and underline the adverbs, then match them to the meanings.

ANSWERS

accidentally = by mistake
unfortunately = we are sorry to say
temporarily = for a short time
immediately = at once
apparently = it seems that

3b Ask students to cross out any options that are not possible in the sentences.

ANSWERS

- 1 Quickly
- 2 (both correct)
- 3 amazingly
- 4 Rapidly
- 5 sadly
- 6 Slowly

Vocabulary note

Adverbs are formed by adding *-ly* to an adjective. Note that when an adjective ends with *-y* it changes to *-i* (for example, *temporary* → *temporarily*).
incredibly = unbelievably
amazingly = very surprisingly
gradually = slowly and step by step
coincidentally = when two things happen together by chance

3c Divide the class into pairs. Ask students to decide which sentences fit in the text, and where. Remind students to think about how the events and background details are organised.

8e In the news

Writing a news story

1 Work in pairs. Read the news story. Do you think it is true or not? Explain your reasons to your partner.

2 Writing skill structuring a news story

a Read the introductory sentence in the news story again. Answer the questions.

- 1 What happened?
- 2 Who was involved?
- 3 Where did it happen?

b Read the main paragraph and find:

- 1 how the woman cut the cable.
- 2 four things that happened after she cut the cable.
- 3 two pieces of background information.

c Read the main paragraph again. How are the events and background details organised?

3 Vocabulary -ly adverbs in stories

a Find these adverbs in the story. Then match the adverbs with their meanings.

Adverbs

accidentally unfortunately temporarily
immediately apparently

Meanings

at once by mistake for a short time
it seems that we are sorry to say

b Cross out any options which are not possible.

- 1 *Apparently*, / *Quickly*, this type of incident is increasing in Georgia.
- 2 *Fortunately*, / *Incredibly*, nobody was hurt.
- 3 Internet services were *amazingly* / *gradually* restored across the region.
- 4 *Coincidentally*, / *Rapidly*, Internet services also failed in other regions last week.
- 5 Software providers say hackers *deliberately* / *sadly* sabotaged the service.
- 6 *Hopefully*, / *Slowly*, the police will release the woman because of her age.

c Work in pairs. Decide which of the sentences in Exercise 3b fit into the story and where they fit.



GEORGIAN WOMAN CUTS OFF WEB ACCESS TO WHOLE OF ARMENIA

An elderly Georgian woman has accidentally cut through an underground cable and cut off Internet services to all of neighbouring Armenia.

The woman, 75, was digging for metal near the Georgian capital Tbilisi and her spade damaged the fibre-optic cable. Unfortunately, Georgia provides 90 per cent of Armenia's Internet. Web users in the nation of 3.2 million people were left twiddling their thumbs for up to five hours. Large parts of Georgia and some areas of Azerbaijan were also temporarily affected. The damage was detected by a system monitoring the fibre-optic link and a security team went immediately to the spot. The cable is protected, but apparently landslides or heavy rain may have left it exposed on the surface. The woman, called 'the spade-hacker' by local media, was arrested on suspicion of damaging property. She faces up to three years in prison.

4 You are going to write a hoax story or an April Fool story. This can be invented or it can be a story you have heard. First, make notes about the main events and the background details of the story. Think about *what?* *who?* *where?* and also *why?* and *how?*

5 Write an introductory sentence to summarise the story. Then number your notes in the order you will write about them. Include at least three adverbs where appropriate.

6 Write your story in about 150–200 words. Write an interesting headline.

7 Work in pairs. Exchange stories. Use these questions to check your partner's story.

- Did the headline make you interested in reading the story?
- Are the facts of the story clear?
- Do you think the story is true?

TALK ABOUT ► MISSING CAPTIONS ► SPECULATING ABOUT THE PAST ► GIVE YOUR OPINION ► SURPRISING NEWS
WRITE ► A NEWS STORY

101

ANSWERS

- 3 Internet services were *gradually* restored across the region.
This could go after '... temporarily affected.'
- 6 *Hopefully*, the police will release the woman because of her age.
This could go after '... three years in prison.'

4 Ask students to think of an April Fool story and to make notes under the question headings.

5 Ask students to write an introductory sentence, as in the Student's Book story. In pairs, let students compare and comment on each other's sentence.

Ask students to order their notes carefully.

6 Ask students to write their stories and headline.

Allow students time to check their partner's work, then revise their story and produce a neat final draft.

7 Ask students to exchange their final piece of work with a partner. Students read and respond to the work using the questions.

Homework

Ask students to write an April Fool story based on one of the headlines in the Extra activity on page 93.

Killer bees

Videoscript

Part 1

00.16–00.43 For thousands of years, an insect has kept the rain forests of Central America alive. It's one of the smallest and least understood creatures on Earth – the bee. Now, a foreign species of bee has invaded these rain forests. One man believes that this foreign bee may cause problems for the whole rain forest. He's ready to take any risk to find out the truth. This man is entomologist David Roubik.

00.48–01.20 Roubik has spent much of his life studying bees. He'll go anywhere to get closer to his favourite creatures. Roubik has studied bees for over 30 years, so he's one of the world's leading experts on native bees. He works deep in the rain forest of Panama. This has allowed him to become more familiar with them than almost anyone else. When Roubik talks about the bees and his studies, it's clear that both are very interesting to him.

01.21–01.55 **David Roubik** I've counted more than 300 different species of bees in just one small forest area in Panama. It's just in a square kilometre of forest, but there might be a million or more individual bees! And this is really about the best place in the world to do the kind of work that I'm doing. They interact with everything. They pollinate the plants. They provide food for a lot of different animals. They live in the most outlandish, interesting places, from the top of the rain forest canopy to holes deep underground. So, it's a wonderful group to look at.

01.56–03.05 Unfortunately, Roubik thinks that the future of these amazing native bees looks bad. Little by little, people are destroying their rain forest habitat. People are also responsible for something that Roubik sees as an even more immediate environmental problem, one that's the result of a scientific experiment that went terribly wrong. In 1957, a group of scientists in South America wanted to improve honey production. So, they started studying a bee that was non-native to the area – the African honeybee. The African honeybee is far more adaptable than most native species. It can reproduce very quickly and develop large swarms in a short time. But, if anything bothers it, it can become very dangerous! At first, the study proceeded normally. Then, one day, some of the African honeybees escaped. Something that at first seemed to be a bit of bad luck eventually became a very costly mistake. The hungry African bees spread quickly throughout South America and were soon known as 'killer bees'. They got the name because of their large swarms, angry behaviour, and potential to hurt people by stinging them repeatedly.

Part 2

03.06–03.34 Roubik went to Panama in 1979 to find some answers to the killer bee problem.



8f Killer bees

One man believes that this foreign bee may cause problems for the whole rain forest.

People were worried about how the bees would affect the environment. By 1982, this powerful foreign bee had crossed almost the entire South American continent. It was starting to make its home in Panama. Roubik realised that the life of the rain-forest and its native bees were in danger. They'd never be the same again. The 'killer bees' had arrived.

03.35–04.06 According to Roubik, the newspapers and television mostly talked only of a group of 'killer bees'. He says that they invented this story for excitement, but they didn't really discuss the important story. The biggest danger was not to man, but to the future of the Latin American rain forests. Native bees are pollinators that play an important role in making all plants reproduce. Without the native bees, Roubik was worried that the rain forests couldn't survive. To understand the true effects of the killer bees, Roubik must study them up close.

04.07–04.41 **David Roubik** This is one of the millions. These bees have done something no other bee ever did. These

things have sucked up most of the resources that are out there for bees – and for other animals too – not just bees visit flowers for food. Birds, bats, butterflies – other things take the same food. And it's not just here and there, it's really everywhere. All the vast forest areas we think of as absolute wildlife preserves have been violated by this bee. This bee doesn't belong in any of them, it lives in all of them. It's not going to go away.

04.42–05.26 Roubik has also discovered what the real danger with the invading bee is. It has better skills for finding food and for taking over areas quickly. Because of its large numbers and strength, the killer bee has little to fear from most creatures.

Roubik knows that nothing will likely stop the advance of the killer bees here. But will the native bees of Panama be able to compete with their hungry new neighbours?

The sight of native beehives with no native bees seems to tell a warning story: there is no honey here. Still, Roubik needs to know for sure, so he goes to a place called Tulum, Mexico.

Before you watch

- 1 Work in groups. Look at the title of this video and the photo and discuss the questions.
 - 1 What do you know about bees?
 - 2 Why do you think these bees are called 'killer bees'?
 - 3 What problems do you think they might cause for the rain forest?
- 2 The video is about a man who studies bees. What do you think you will see him doing in the video?

driving	getting stung by a bee
flying a plane	hiking in the rain forest
holding bees	putting his hand in a beehive
writing a journal	working with a beehive

While you watch

- 3 Watch the video and check your answers from Exercise 2.
- 4 Work in pairs. Choose one of the topics below. Watch the first part of the video (to 03.05) and make notes about David Roubik or bees. Then tell another pair what you found out about your topic.

David Roubik

- 1 How long has he studied bees?
.....
 - 2 Where does he work?
.....
 - 3 How many species of bees has he found in one square kilometre in the rain forest?
.....
 - 4 Why does he think there's a problem for the native bees?
.....
- Bees**
- 5 How do bees benefit the rain forest?
.....
 - 6 Where do they live?
.....
 - 7 Why did people bring African honeybees to South America?
.....
 - 8 How did the experiment go wrong?
.....

adaptable (adj) /ə'dæptəbəl/ able to change easily when necessary	outlandish (adj) /aʊt'lændɪʃ/ very strange
canopy (n) /'kænəpi/ the top level in a rain forest	pollinate (v) /'pɒlɪneɪt/ carry pollen from one flower to another
compete (v) /kəm'pi:t/ try to be more successful	repeatedly (adv) /rɪ'pi:tɪdli/ again and again
entomologist (n) /entə'mɒlədʒɪst/ a person who studies insects	sting (v) (past: stung) /stɪŋ/ what an insect does when it injects a person with poison
force out (v) /fɔ:ɪs 'aʊt/ oblige a person or animal to leave	spread (v) /spred/ move to cover a larger area
hive (n) /haɪv/ a place where bees live	survive (v) /sə'vaɪv/ continue living after a dangerous event
interact (v) /ɪntə'rekt/ have a relationship with	swarm (n) /swɔ:m/ a large group of bees
leading (adj) /'li:dn/ one of the most important	take over (v) /teɪk 'əʊvə/ take control of something
native (adj) /'neɪtɪv/ occurring naturally in a place	

- 5 Watch the rest of the video (03.06 to the end). Are these sentences true (T) or false (F)? Correct the false sentences.

- 1 By 1982 the African bee was starting to make its home in Panama.
- 2 Roubik thinks the newspapers reported the story of the bees correctly.
- 3 The biggest danger from the African bees is to man.
- 4 Native bees are important because they pollinate the plants in the rain forest.
- 5 Native bees cannot compete with the stronger African bees.
- 6 Roubik visits the Maya people because they have a lot of experience with bees.
- 7 Maya farmers think the African bees are not a problem.
- 8 Fifteen years ago there wasn't much honey.

After you watch

6 Roleplay interviewing a honey farmer

Work in pairs.

Student A: You are an entomologist studying bees. Use the ideas below to prepare questions to interview a Maya honey farmer.

Student B: You are a Maya honey farmer using traditional farming techniques. Use the ideas below to tell the entomologist about your concerns.

- how long the farmer has kept bees
- the effect of killer bees on his/her life
- how much honey there used to be
- how many native bees there are now
- the effects the disappearance of native bees is having on the local forests

Act out the interview. Then change roles and act out the interview again.

7 Work in groups and discuss these questions.

- 1 Should human beings be permitted to experiment with nature to increase the production of food?
- 2 What are the risks of experiments like these? What are the advantages?

Before you watch

- 1 Students work in groups. Ask them to look at the photo, title and caption and discuss the questions. Take feedback from the class.
- 2 Before watching the video, ask students to predict what actions from the box they think they will see the man doing.

While you watch

- 3 Play the whole of the video for students to check their ideas from Exercise 2.

ANSWERS

driving, hiking in the rain forest, holding bees, working with a beehive, putting his hand in a beehive

- 4 Ask students to choose one of the topics and make notes in pairs. Give them time to read the questions, then play the first part of the video. Students then work with another pair to share their information.

ANSWERS

- 1 over 30 years
- 2 deep in the rain forest of Panama
- 3 300
- 4 The 'killer bee' has better skills and is using up the resources needed by the native bees.
- 5 They pollinate plants and provide food.
- 6 all sorts of places, from high in the tops of trees to underground holes
- 7 to improve the honey production of native bees
- 8 The bees escaped and spread across the continent.

- 5 Give students time to read the sentences, then play the second part of the video for students to decide if they are true or false, and correct the false sentences.

ANSWERS

- | | | | |
|-----|-----|-----|-----|
| 1 T | 3 F | 5 T | 7 F |
| 2 F | 4 T | 6 T | 8 F |
- See also the underlined phrases in the videoscript.

After you watch

- 6 Students work in pairs to roleplay an interview with a honey farmer, according to the instructions.
- 7 Students work in pairs to discuss the questions.

05.27–05.40 Tulum is one home of the Maya, an ancient culture from Mexico and Central America. Here, Roubik hopes to find data that indicates just how much of a danger the killer bees really are.

05.41–05.49 **David Roubik** My data would only reach back 15 years, but I needed someone with even more experience with native bees. That's what the Maya in particular had to offer.

05.50–06.15 Roubik further explains that the native bee has been an important part of Maya culture for over 1,000 years. If there was any change in the bee population, they would likely know. The descendants of the ancient Maya have always kept native bees in the traditional way – until now. Modern-day Maya farmers now believe that the killer bees have caused huge changes.

06.17–06.26 **David Roubik** Fifteen years ago, the honey used to jump out at you. Take off the hive cover and there'd be honey right out to the edge. Now, I can reach half my arm in and there's just space.

06.30–06.37 **David Roubik** These people noticed, in terms of two or three years after African bees arrived, their native bees and their honey were not there.

06.38–06.49 Roubik has finally proved an important point: the African bee appears to be forcing out native bees. It's an absolutely terrible discovery for the entomologist.

06.50–06.59 **David Roubik** The disturbing reality is that, it is not a natural part of this community. Yet it has become part of nature, and ironically, man has put it there. But man can't take it away.

07.00–07.20 Nobody really knows if the native bees of Latin America will survive, and it may take many years to find out. However, deep in the heart of Panama, David Roubik continues his research. He intends to learn more about the secrets of native bee life before it's too late.

Grammar

1 Ask students to match the news headlines (1–3) with the comments (a–f), then compare their answers in pairs.

ANSWERS

- 1 b, e 2 a, f 3 c, d
 a *must* c *might have* e *might*
 b *can't* d *can't have* f *must*

2 Ask students to look at the photo and make guesses, then check their ideas in *the facts* and *the theories*.

3 Ask students in pairs to discuss the theories, then work with another pair of students and decide which theory is the best.

Vocabulary

4 Ask students in pairs to write down two words from Unit 8 in each list.

ANSWERS

- 1 oxygen, nitrogen
 2 flies, ants, butterflies
 3 ancient, prehistoric
 4 theory, facts

5 Ask students to work in pairs and answer as many questions as they can, using their general knowledge.

SAMPLE ANSWERS

- when you change aspects of a photo when editing
- the part of a plant that the leaves are attached to
- things that stick to other things, e.g. glue, jam
- Arctic tern and salmon
- They move water to places where it is needed.
- a collection of documents
- detectives, archaeologists
- no
- discoveries
- digging

Real life

6 Ask students to work in pairs to think of ways of reacting to news using the words.

ANSWERS

you're joking; come off it; hold on; that can't be right; you can't be serious; are you sure?

7 Divide the class into groups. Tell each person to write true and false sentences about themselves on six pieces of paper. Students take turns to read out the sentences. Other students must react appropriately and guess which sentences are true.

Grammar

1 Match the news headlines (1–3) with the comments (a–f). There are two comments for each headline. Choose the best option in the comments. Then work in pairs. Compare your answers.

- 1 **MAN CLAIMS TO BE 150 YEARS OLD**
 2 **WEBSITE REVEALS LOCH NESS MONSTER PHOTOS**
 3 **ASTRONOMERS FIND NEW PLANET**

- a They *could* / *must* be fake.
 b He *can't* / *must* be telling the truth.
 c They *might have* / *mustn't have* used new equipment.
 d It *can't have* / *might have* just appeared from nowhere.
 e He *might* / *might not* be old – but not that old.
 f They *might* / *must* be of a big fish.

2 Look at the photo of Stonehenge, a prehistoric site in southern England. Do you know what Stonehenge was for? Check your ideas in *the facts* and *the theories*.



the facts

- ▣ dated at 3–4,000 years ago
- ▣ no written records from that period
- ▣ The larger stones weigh 25 tons. They come from about 30 kilometres away from the site.
- ▣ The smaller stones originate from Wales, 230 kilometres away.
- ▣ The circle is aligned with the sun's highest and lowest points in the sky.

the theories

- ▣ created by Merlin of King Arthur's court
- ▣ the ruins of a Roman building
- ▣ built by invaders from Denmark
- ▣ an alien landing area
- ▣ a sacred site
- ▣ a cemetery or burial site
- ▣ a scientific observatory

104

Speaking

8 Divide the class into pairs to talk about surprising things they have read.

3 Work in pairs. Discuss the theories and decide what you think of each one. Then work with another pair. Which theory do you think is the most probable? Explain your reasons.

I CAN

speculate and make deductions about events in the present and past (modal verbs)

Vocabulary

4 Work in pairs. Write down two of these things.

- 1 gases: _____, _____
 2 insects: _____, _____
 3 words meaning 'very old': _____, _____
 4 words for ideas in science or investigations: _____, _____

5 Work in pairs. Answer as many questions as you can.

- What do you understand by trick photography?
- What part of a plant is the stem?
- What kind of things are sticky?
- Name some animals that migrate.
- What do irrigation systems do?
- What's an archive?
- What kind of people might build a profile of someone?
- Is a hoax a person?
- What kind of thing happens accidentally?
- What do you use a spade for?

I CAN

talk about things from the natural world
 talk about history

Real life

6 Test your memory. Can you remember ways of reacting to news using these words?

joking off on right serious sure

7 Work in groups. Each person needs six pieces of paper. Write surprising sentences about yourself (true and false) on the pieces of paper. Take turns to read out your sentences one by one at random. Use appropriate expressions to react to the sentences about the other people and try to find out which sentences are true.

I CAN

react appropriately to surprising news

Speaking

8 Work in pairs. What is the most surprising (true) thing you have read about or seen a report about in the last few months? Tell your partner.