6 WEATHER AND CLIMATE

Learning objectives

Go through the learning objectives with the class to make sure everyone understands what they can expect to achieve in this unit. Point out that learners will have a chance to review these objectives again at the end of the unit.

UNLOCK YOUR KNOWLEDGE

Lead-in

Learners work in teams to guess the answers to the questions below. Afterwards, they swap papers with another team to award one point for each correct answer. The team with the most points at the end is the winner.

1 What is the highest temperature ever recorded on earth?
a 56.7°C b 66.7°C c 76.7°C d 86.7°C

2 Where was it?
a Kebili, Tunisia b Oodnadatta, Australia
c Athens, Greece d Death Valley, California, USA

3 What is the lowest temperature ever recorded on earth?
a −49.2°C b −69.2°C c −89.2°C
d −109.2°C

4 Where was it?
a Oymyakon, Russia b Vostok Station, Antarctica
c North Ice, Greenland d Prospect Creek, Alaska, USA

5 Where is the place in the world with the most rain per year?
a Mawsynram, north-east India
b Lloró, Colombia
c Commerson, Réunion, Indian Ocean
d Holt, Missouri, USA

6 How much rain falls there (mm per year)?
a 133 mm b 1,330 mm c 13,300 mm d 133,000 mm

7 Where is the place in the world with the least rain?
a Al-Kufrah, Sahara Desert, Libya
b Atacama Desert, Chile
c Lut Desert, Iran
d Dry Valleys, Antarctica

8 How much rain falls there (mm per year)?
a about 10 mm per year b about 5 mm per year
c about 1 mm per year d No rain ever recorded

Answers

1a 2d 3c 4b 5b 6c 7d 8d

Background note

The other places mentioned in the quiz are all holders of local records (e.g. Kebili, Tunisia is the hottest place in Africa; Commerson, Réunion holds the record for the most rain in 4 days). Search on the Internet for a list of the world's wettest places. The most surprising record is perhaps that parts of Antarctica never receive any rain. The Dry Valleys are surrounded by tall mountains which block all snow, ice and rain. Again, search on the Internet for more information.

1 Learners work alone to match the words and pictures. Check with the class.

Answers

1 sun 2 wind 3 rain 4 snow

2, 3 Learners discuss the questions in pairs, including reasons for their answers, and then feed back to the class. You could elicit good and bad things about each type of weather from 1.

Answers

2 Answers will vary.
3 Answers will vary.

WATCH AND LISTEN

PREPARING TO WATCH

UNDERSTANDING KEY VOCABULARY

1 Learners work alone to match the words and definitions. They check in pairs and feed back.

Answers

1 d 2 a 3 c 4 b 5 e

2 Learners work alone to read the definitions and work out the answer. You may need to check they understand *run after* and *follow*. When you check with the class, point out that this technique of analyzing the parts of a long word (e.g. *storm + chase + r*) is an effective way of guessing the meaning of new words.

Answers

b

3 Play the video for learners to check.

Video Script

Environment

Tornadoes are the most violent storms on the planet. They happen all over the world but most are found in Tornado Alley, in the middle of the United States – especially in north Texas, Kansas, Nebraska and Oklahoma.

Most tornadoes are less than 80 metres wide and have a wind speed of less than 180 kilometres an hour. But some tornadoes are more than three kilometres wide and have a wind speed of 500 kilometres per hour. These tornadoes are huge and extremely dangerous. They destroy houses, trees, buildings and cars, and they can even kill. In 2011, during the worst tornado season in the US since 1950, 551 people were killed by tornadoes.

When people hear tornado sirens, they normally run for cover. But not everybody runs away. Stormchasers actually follow the tornadoes.

Stormchasers follow the storms to get scientific facts about how tornadoes work.

Josh Wurman is a scientist. He is a professional stormchaser – his job is to study tornadoes. He has a large team and uses advanced technology to get information about the tornadoes. This radar helps track the tornado. He even has a specially protected truck that can go right inside the storms.

Other stormchasers follow the storms to take pictures and videos. Reed Timmer works from home. He works with a few friends and uses the Internet, a video camera and a 4x4 car to follow tornadoes. He makes money by selling the videos of storms to television companies. The stormchasers' job is very dangerous. But it is also very important. The pictures and information they get help us understand tornadoes better. By improving our understanding of tornadoes, we can predict the storms and hopefully save lives in the future.

WHILE WATCHING

UNDERSTANDING MAIN IDEAS

4 Learners read through the sentences to try to remember the correct words. Then play the video a second time for them to check. They check in pairs and feed back.

Answers

1 mostly 2 Some 3 sometimes 4 different 5 is 6 save lives in the future

5 Learners work in pairs to circle the reasons and then check with the class.

Answers

a, c

UNDERSTANDING DETAIL

6 Remind learners that Josh Wurman appears in the middle of the video; Reed Timmer appears towards the end. Learners then work in pairs to complete the exercise. You could show the video a third time if necessary for learners to check. Discuss the answers with the class.

Answers

1 J 2 J 3 R 4 J 5 R 6 J 7 R

MAKING INFERENCES

7, 8 Learners work in pairs to discuss the questions. When you check with the class, encourage learners to provide a range of reasons for Question 8 based on what they saw in the video and what they can imagine.

Answers

7 Answers may vary.
8 Answers may vary.

Possible Answers

2 Good: exciting; challenging (like a treasure hunt with moving treasure); important/useful; may be well paid.
Bad: dangerous; unreliable income; difficult (they may not find a storm); impossible to plan in advance.

DISCUSSION

9 Learners discuss the questions in pairs. After a few minutes, open up the discussion to include the whole class.

Possible Answers

1 avalanche, drought, flood, landslide, thunderstorm
2 Answers will vary.
3 Answers will vary.

READING 1

PREPARING TO READ

UNDERSTANDING KEY VOCABULARY

1 Learners work alone to complete the sentences. They check in pairs and feed back.

> **Answers**
> 1 Damage 2 cover 3 Huge 4 Almost 5 Cause

2 Learners work alone to match the words and definitions. They check in pairs and feed back. You may need to check the pronunciation of *flood* /flʌd/ and the meaning of *loss of life* (= death, usually of more than one person).

> **Answers**
> 1 b 2 e 3 d 4 c 5 a

WHILE READING

READING FOR MAIN IDEAS

3 Tell learners to read the text quickly to identify the main ideas. Point out that the purpose of the exercise is to show the difference between main ideas and supporting ideas or examples. When they have finished reading, they check in pairs. When you check with the class, discuss how they chose their answers. You can also check the pronunciation of *drought* /draʊt/.

> **Answers**
> 1 a 2 b 3 a 4 b 5 a

READING FOR DETAIL

4 Learners work alone to complete the sentences. They check in pairs and feed back.

> **Answers**
> 1 b 2 a 3 a 4 b

READING BETWEEN THE LINES

RECOGNIZING TEXT TYPE

5, 6, 7 Learners discuss the questions in pairs. When you check with the class, ask for evidence to justify learners' answers (see **Background note** below).

> **Answers**
> 5 b
> 6 c
> 7 a

Background note

The text is not from a newspaper because the verbs are mostly in the present simple; where past events are reported, they are from many years ago (1999, 1972). In a newspaper, we would expect to find reports of recent past events. We would expect a novel to contain more descriptive language, and to refer to specific people and events rather than general statements.

There are no phrases to suggest that the text contains opinions (e.g. *I believe*, *In my opinion*, *should*, *hopefully*, etc.).

DISCUSSION

8 Learners discuss the questions in pairs. After a few minutes, open up the discussion to include the whole class.

> **Answers will vary.**

READING 2

PREPARING TO READ

USING YOUR KNOWLEDGE

1 Learners discuss the questions in pairs. Avoid confirming or rejecting learners' answers until after Exercise 2.

> **Answers**
> 1 b 2 a

USING YOUR KNOWLEDGE TO PREDICT CONTENT

Learners close their books. Write the phrase 'Using your knowledge to predict content' on the board. Elicit what it means, and why it can be useful. Learners then read the information in the box to check. You could also brainstorm with the class a list of words and phrases they might expect to see in a text about the Sahara Desert (e.g. *sand*, *camel*, *snake*, *oasis*, *temperature*, *rainfall*, *thirsty*) and write these on the board. After Exercise 2, discuss briefly which predictions

were accurate and whether this prediction exercise was useful.

2 Learners read the article to check their answers. Remind them to ignore the gaps in the text as well as difficult vocabulary, as these will be dealt with later.

UNDERSTANDING KEY VOCABULARY

3 Learners work alone to match the words and definitions. Encourage them to find and underline the words in the article to help them work out the meaning from context. They check in pairs and feed back.

Answers

1 an expert 2 careful 3 a desert 4 survive 5 a shock
6 last 7 signal 8 rainfall 9 decide 10 protect

4 Make sure learners have access to dictionaries (printed or online). They work in pairs to categorize the words. When you check with the class, use questions to check the meaning of the words (e.g. *Which things are part of a car? Which things are clothes?*).

Answers

things: a tyre, a blanket, a jumper, trousers, a mirror, a hole
animals: a snake, a scorpion

Language note

Tyre is spelled *tire* in American English.

WHILE READING

READING FOR MAIN IDEAS

5 Learners work alone to match the paragraph titles. They check in pairs and feed back.

Answers

1 H 2 F 3 D 4 G 5 E

Background note

The text mentions that the desert covers eleven countries. Of course, it doesn't completely cover them – there are large parts of each country which are not desert. The countries are: Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Western Sahara, Sudan and Tunisia. The status of Western Sahara as a separate country is disputed: it was annexed by Morocco in 1975, so some people would argue that there are only ten Saharan countries.

READING FOR DETAIL

6 Learners work alone to match the sentence halves and check in pairs. When you check with the class, elicit where in the text this information is given.

Answers

1 d 2 c 3 a 4 b

Optional activity

Learners work in pairs to make similar sentences about a place they know well (e.g. their own city).

7 Learners discuss the advice in pairs. When you check with the class, ask learners to justify their answers with evidence from the text.

Answers

a, c, d, f

READING BETWEEN THE LINES

RECOGNIZING TEXT TYPE

8 Learners discuss the question in pairs. Discuss with the class why the other answers are wrong.

Answers

b

DISCUSSION

9, 10 Make sure everyone understands the question (especially the meaning of *if you were …*). Use translation if necessary to avoid getting into an analysis of conditional structures. Learners then work alone to choose the three most important things.

After a few minutes, put them in pairs to compare and discuss their answers. Finally, open up the discussion to include the whole class, and to try to agree on a ranking that everyone can agree on.

Answers

9 Answers will vary.
10 Answers will vary.

LANGUAGE DEVELOPMENT

COLLOCATIONS WITH *TEMPERATURE*

1 Learners work alone to complete the sentences. When you check with the class, ask volunteers to make similar sentences about their own town/city.

Answers

1 high 2 low 3 maximum 4 minimum

DESCRIBING A GRAPH

Tell learners to read the information in the box to find six words for describing graphs. Elicit the past tense forms of the four verbs and the correct word stress of the two nouns (see **Language note**). It may be helpful if you teach/elicit the main meaning of *reach* (e.g. *I can't reach the top shelf – it's too high*), as this may make it easier for learners to learn the meaning in the context of graphs.

Language note

Rise (*rose*, *risen*) and *fall* (*fell*, *fallen*) are irregular verbs. *Drop* (*dropped*) and *reach* (*reached*) are regular verbs.

Note that three of the verbs can also be used as nouns (*a rise*, *a drop*, *a fall*).

The verbs *increase* (inCREASE) and *decrease* (deCREASE) can also be used as nouns, in which case the word stress changes (an INcrease, a DEcrease).

2, 3 Learners work alone to match the sentences and graphs. Check with the class.

Answers

2 1 A 2 B
3 1 A 2 B 3 B 4 A

4 Discuss this with the class. Point out that we use *to* after *rise*, *fall* and *drop* (e.g. *the temperature rises to 20°C*), but not after *reach* (*the temperature reaches ~~to~~ 20°C*).

Answers

1 rise, reach 2 fall, drop

5 Learners work alone to complete the sentences. They check in pairs and feed back.

Answers

1 a an increase b reaches
2 a a decrease b drops
3 a a decrease b falls
4 a an increase b rises

Optional activity

Learners cover the sentences and look only at the graphs. They work in pairs to try to remember the correct sentence for each graph. If necessary, they can look at the first few words of each sentence to remind them.

CRITICAL THINKING

Read the Writing task aloud. Elicit from the class where in this unit they might find a good model for this writing task. (**Answer:** Paragraph B of Reading 2)

ANALYZE

Learners close their books. Elicit from the class why we use graphs, and why we write about them. Elicit some things we might include when we write about a graph. Learners then read the information in the box to check.

1, 2 Learners work in pairs to find the answers. Draw attention to the use of prepositions: *temperature <u>in</u> degrees centigrade*, *data <u>for</u> a period of one year*, *rainfall <u>over</u> a year*.

Answers

1 Uzbekistan
2
1 rainfall in millimetres
2 temperature in degrees centigrade
3 one year
4 a bar graph
5 a line graph

3 Learners work in pairs to complete the table with an approximate number. Check their answers.

Answers

	J	F	M	A	M	J	J	A	S	O	N	D
temp-erature	-4–6	-1–7	3–13	9–20	12–27	16–33	17–34	15–33	8–28	6–21	3–14	1–9
rainfall	40	30	70	60	20	10	10	5	20	30	40	350

4, 5 Learners discuss the table and graph in pairs. After a few minutes, discuss the answers with the class.

Answers

4
The most important information is the difference in temperatures (low: -4, high: 34, temperature range in June–August), the lowest rainfall (June–August), and the highest rainfall (December).
5
1 July
2 January
3 December
4 August
5 difference in temperature between May and September

6 Learners discuss the questions in small groups. When you check with the class, get learners to justify their ideas.

Possible Answers

1 thunderstorms, snow
2 damage to homes and building, problems with transport

WRITING

GRAMMAR FOR WRITING

COMPARATIVE AND SUPERLATIVE ADJECTIVES

1 Learners work in pairs to match the rules with the examples. Check the answers carefully with the class, focusing especially on the spelling rules.

Answers

1 b 2 e 3 d 4 c 5 a

2 Make sure everyone understands the meaning of *average* (= normal, typical – calculated using a mathematical formula). Learners then work alone to complete the sentences. They check in pairs and feed back.

Answers

1 higher 2 colder 3 lowest 4 wetter 5 drier
6 rainiest 7 sunny

Optional activity

Learners test each other in pairs. One learner reads names of the countries from a sentence and the adjective (e.g. Cuba, high; Iceland, low) and the other learner has to make a complete sentence (without looking at the book). They could repeat the exercise for two or three cities that they know well.

ACADEMIC WRITING SKILLS

Introductory sentences for descriptive paragraphs about a graph

Learners close their books. Write the following gapped sentence on the board: *The graph shows the temperature ___ degrees centigrade ___ a day ___ the Sahara desert.*

Elicit from the class what the missing prepositions are. Then elicit the structure of the sentence (i.e. *The graph shows* + what + when + where). Learners then read the information in the box to check.

1 Learners work alone to complete the sentences. They check in pairs and feed back.

Answers

1 rainfall, year, Samarkand (Uzbekistan)
2 temperature, year, Samarkand (Uzbekistan)

Optional activity

You could write the sentences on the board to show how they fit with the pattern of the model sentence. You could also elicit some more sentences which fit the same pattern.

Possible answers

The graph shows the average height of 18-year-olds over a 20-year period in Chile.
The graph shows the amount of sunshine in hours per day over a year in St Petersburg.

Using data to support main ideas

Tell learners to read through the information in the box. Make sure they understand *support* (make stronger) and *main ideas* (= the most important ideas).

2, 3 Learners complete the exercises alone. Check with the class.

Answers

2
1 main idea: The hottest time is between 2 pm and 4 pm.
data: 33 °C
2 main idea: The coldest time is at 4 am.
data: −1 °C

3 1 a 2 b

4 Learners work alone to match the main ideas and data. They check in pairs and feed back.

Answers

1 c 2 b 3 a 4 d

WRITING TASK

PLAN AND WRITE A FIRST DRAFT

1 Point out that this is the Writing task that they looked at in the **Critical thinking** section. Point out also that the topic sentence should follow the formula of the introductory sentences they studied earlier. Learners work alone to write their sentences. They check in pairs and feed back.

2, 3, 4 Elicit from the class how many sentences they should write in total, including the introductory sentence they have already written (**Possible answer:** Probably nine: the introductory sentence, four main ideas (two per graph) and four sentences with data (two per graph). Learners work alone to write their sentences. Monitor carefully and provide support as they write.

EDIT

5, 6, 7, 8 Learners go through the checklists in pairs. They should check each other's work as well as their own, and make any necessary changes.

Answers

Model answer: see page 134 of the Teacher´s Book

OBJECTIVES REVIEW

See Introduction, page 9 for ideas about using the Objectives Review with your learners.

WORDLIST

See Introduction, page 9 for ideas about how to make the most of the Wordlist with your learners.

REVIEW TEST

See page 114 for the photocopiable Review Test for this unit and page 94 for ideas about when and how to administer the Review Test.

RESEARCH PROJECT

Improve your local environment.

Learners should collect data on the amount of waste produced by their class or school and identify improvements. They should brainstorm a plan to educate and encourage other learners to recycle and reduce waste material. Then, the learners should try to implement their plan.

Explain to the class that they should measure how successful their solutions were and report back with any lessons learned.