16 Who cares?

Unit profile

Vocabulary: Climate change
Reading: *Fact or Fiction?*
Grammar: Second conditional: *would*, *could* and *might*; *I wish* and *if only*
Vocabulary: Conditional phrases
Listening: A year in an eco-house
Speaking: Arguing for and against something

Warmer

1 Put students into small groups to make a list of the main problems facing the world today.

2 Elicit ideas and add them to the board. If students haven't mentioned these five problems, add them to the board in a jumbled order: *1 poverty*, *hunger and lack of drinking water*, *2 climate change*, *3 the economic situation*, *4 terrorism, 5 energy supplies.*

3 Circle these five problems and reveal that a European Union survey put them as the top five problems facing the world. Ask students to work in their groups to put them into order from the biggest to the smallest problem. Elicit ideas and then give the correct order (listed above).

Your profile

Put students into pairs to discuss the questions. For the second question, they should write down why they think climate change is or isn't important, giving reasons. Share ideas as a class.

VOCABULARY Climate change

1 2.14 Put students into pairs to discuss the questions. Monitor and join in with the discussions, giving positive feedback for good or interesting ideas. Share ideas as a class before playing the recording. Check answers.

Answers

1 extreme weather, such as floods and storms, and changes to the seasons, which can have a bad effect on crops
2 greenhouse gases; humans
3 They breathe in carbon dioxide and breathe out oxygen.
4 walking and cycling
5 cardboard, paper, aluminium, steel, plastic and glass
6 solar power and wind farms

Audioscript

1 Climate change causes extreme weather such as floods and storms. It also causes changes to the seasons, which can have a bad effect on food crops.
2 Climate change is a result of 'greenhouse gases' in the atmosphere. These greenhouse gases include CO_2 – carbon dioxide – and they occur naturally in the atmosphere, but the level of CO_2 in the atmosphere has risen as a result of human activities. For example, the use of fuels such as coal, oil and gas contributes to the problem because when these fuels are burned, they generate carbon dioxide.
3 Trees breathe in carbon dioxide and they breathe out oxygen, so they're good for the environment. Unfortunately, when people destroy rainforests, there are fewer trees, and so more carbon dioxide in the atmosphere. That's why conservation of the rainforests is so important.
4 Electric buses and trains use less fuel and are greener than travelling in private cars, but walking and cycling are obviously the most environmentally friendly ways of getting about.
5 Recycling is important because it requires a lot of energy to make things, so the more we can re-use, the better. A large number of different materials can be recycled, such as cardboard and paper, aluminium and steel, plastic and glass.
6 Coal-, oil- and gas-powered electricity generation create a lot of carbon dioxide. Greener sources of electricity include solar power and wind farms.

2 Put students into pairs to discuss how the photos are related to different environmental issues. Set them the challenge of trying to use all of the words in the box. Ask any pair that managed to use all of the vocabulary to share their ideas with the class.

3 Ask students to complete the text individually and then to compare their answers with a partner. Check answers. You could nominate a student and give them one of the words from this exercise. They should make a sentence using the word, before nominating another student and giving them a different word. This student makes an example sentence and nominates the next student. Repeat for all nine words.

Answers

1 carbon dioxide **2** the atmosphere **3** rainforests **4** electricity generation **5** recycling **6** environmentally-friendly **7** solar power **8** wind farms **9** conservation

4 Put students into small groups to discuss the questions. For question 3, ask them to compare their lifestyles and decide who is the most environmentally-friendly. They should think about things like whether they walk/cycle or are driven to school, whether they often buy fresh local food or food with lots of packaging.

READING

1 Ask the class if they like watching disaster movies. Hold a brief class discussion, then students look at the posters and say which they have seen. If they have seen any of the movies, they tell the class about it, saying whether they liked it or not. Tell students to read the text to see which film is not mentioned.

Answer
Ice Age 4

2 Remind students that it's important that all points in the summary relate to the text and not just one or two. Give them a few minutes to read the text and check answers.

Answer
2

3 Put students into small groups and ask them to try to answer the questions before reading the text again. Allow a few minutes for them to look back at the text. Check answers.

Answers
1 They lacked drama (and special effects).
2 They became about disasters outside our control. OR Special effects were introduced and disaster movies became more popular.
3 They are about things within our control.
4 Use renewable energy and conserve rainforests.

4 Ask students to match the words to the definitions. Check answers and then tell them to describe any disaster movies or programmes they have seen to a partner, using the words.

Answers
1 concern **2** reduction **3** destruction **4** survival

5 Put students into small groups and monitor as they discuss the questions. Share ideas about the films as a class, and elicit a different way from each group for question 2.

Extension activity
Ask students to produce an advert or a review for a disaster movie they have seen. They can then share their reviews and compare them with anyone else who has chosen the same movie. Share ideas as a class.

Talking points
Put students into small groups to discuss the questions. Tell them to think of two or three reasons for each question. Share ideas as a class.

EP Word profile
Books closed. Write *set*, *sets out* and *have set* on the board and tell students to write an example sentence using each phrase. Books open. Ask students to compare their sentences with the ones in the book, and to identify any with a similar meaning and use. Set the exercises on page 127. Check answers.

Answers
1 set off, set out
2 **1** BE IN PLACE **2** STORY/FILM **3** ACHIEVE **4** EVENT/ACTIVITY **5** ORGANISATION **6** EQUIPMENT
3 **1** set an example **2** set out **3** set off **4** set a record **5** set it free

Cooler
Put students into small groups to create their own disaster movie. They should think of where it takes place, what happens and which actors they would use. Ask each group to summarise their ideas and take a class vote on the one they would most like to watch.

GRAMMAR Second conditional: *would, could* and *might*

1 Books closed. Write *second conditional* on the board. Elicit what students already know about this conditional, including its use, i.e. we use it to talk about things that are impossible or unlikely. It can refer to future time (*If I won the lottery, I would buy a house*) or the present (*If I knew the answer, I would tell you*). If students know the basics and can give you an example in the second conditional, then open the discussion to the use of *could* and *might* in the second conditional, e.g. to talk about possibility. Books open. Ask students to complete the exercise and to compare their ideas with those in the book. Check answers.

→ **Grammar reference Student's Book page 153**

Answers
1 c **2** d **3** a **4** b

2 Ask students to complete the exercise individually before comparing with a partner. Check answers.

Answers
1 could afford; saved **2** asked; might help
3 wouldn't say; were **4** might buy; weren't **5** would; was

3 Ask students to complete the exercise individually. Allow them to compare answers with a partner before checking as a class. Encourage stronger students to say why their answer is correct. You may need to explain *average* (*usual*), *materials* (*solid substances from which things can be made*) and *waste time* (*make a bad use of time*).

Fast finishers
Ask fast finishers to think about whether they agree with the claims in the text or not. Elicit ideas after checking answers to exercise 3.

Answers
1 didn't use **2** would/might not happen
3 might/would slow down **4** didn't use **5** were
6 wouldn't waste **7** would do

Corpus challenge

Write *If + drive + carefully* on the board and ask students to write their own sentences using these words and the second conditional. Elicit one or two examples and then ask students to correct the sentence in the Corpus challenge box. *Would* should appear only in the second clause here.

Answer
If everyone drove more carefully, there wouldn't be so many accidents.

I wish and *if only*

4 Tell students *I wish I could go to the beach. If only it were sunny!* Ask the class if you are going to the beach (*no*) and why not (*it isn't sunny*). Nominate one student to read out the first sentence from the exercise and then ask another to answer the question that follows it. Get the rest of the class to raise their hand if they agree with the second student's answer. Then clarify the correct answer. Repeat this process for each question.

Answers
1 No **2** He tells lies; that he wouldn't tell lies. **3** No

5 Tell students to complete the rules individually and then check answers. When checking answers, ask them to match an example from exercise 4 to each rule.

→ **Grammar reference Student's Book page 153**

Answers
a past simple **b** could

6 Put students into pairs to complete the sentences. Check answers. Alternatively, add a time limit of one minute and see how many each pair can get correct. After one minute, find out who has completed the most sentences and then check to see how many they have correct.

Answers
1 was **2** would be **3** could hang out; wasn't
4 could go out; could drive **5** would clear up

7 Monitor and help as students write down what they would say in each of these situations. Allow them to compare their answers with a partner before checking as a class.

Possible answers
1 I wish you wouldn't always borrow my phone without asking.
2 If only I had some sunglasses!
3 I wish we could go out this evening.
4 If only I had enough money for lunch.

VOCABULARY Conditional phrases

1 Ask students to read the sentences individually and to decide which three phrases have the same meaning. Elicit the answer from the class. Explain that *even if* emphasises that a different situation would not change what you have just said, e.g. *I would never go to bed at 7pm even if I was really tired*.

Answers
as long as, *assuming* and *provided that*

Extension activity

Ask students to write sentences using the conditional phrases on the topics of learning German, buying a tablet, living abroad and getting a job. Tell them to compare their sentences with a partner and to ask questions about each one. Discuss ideas as a class.

2 Tell students to do the matching exercise individually. Allow them to compare their answers with a partner before checking as a class. You could ask students to write two additional sentence beginnings for their partners to complete with their own ideas and a conditional phrase.

Mixed ability

Ask stronger students to complete questions 1 to 4 with their own ideas, and to share these during feedback to exercise 2.

Answers
1 b **2** c **3** d **4** a

3 Monitor as students ask and answer the questions. Give positive feedback for interesting ideas. Nominate one or two individuals to tell the class about their partner.

LISTENING

1 Put students into pairs to look at the photo and to talk about what they think an eco-house might be like. Tell them to think about things such as size, heating and comfort. Discuss ideas as a class.

Possible answer
An eco-house is a home that is designed and built in an environmentally-friendly way. For example, they are small, so that you don't need much energy to build or heat them. They are made with modern materials that keep them warm in winter and cool in summer. The power comes from solar panels on the roof.

2 ▶ **2.15** Play the recording and ask students to make a note of any ideas they hear that are similar or different to their own ideas from exercise 1. They can discuss the similarities and differences they noted down with a partner before whole-class feedback.

Audioscript

Interviewer: Lara Baum and her family are from Bern in Switzerland. They have just taken part in an experiment called 'One-Ton, One-Year'. Lara, what does 'One-Ton, One-Year' mean?

Lara: I saw an advert for a family to live in an eco-house for a year. The idea was to live a very green lifestyle and the challenge was to produce just one ton of carbon dioxide per person per year. The challenge ended up being trickier than we'd imagined, actually, though it wasn't physically tiring and we got much healthier over the year.

Interviewer: But you said the challenge was to produce just one ton of carbon dioxide per person per year? That sounds like a lot of carbon dioxide!

Lara: Well, one ton of carbon dioxide per person per year sounds a lot, but the average Swiss person produces seven tons of carbon dioxide every year. To put that into perspective, the average African person produces a lot less than one ton of carbon dioxide a year.

Interviewer: How do these seven tons of carbon dioxide add up?

Lara: Transport is a major factor: carbon dioxide from flying abroad is followed closely by local transport. Then there's the carbon dioxide from heating the home, cooking, electricity for lighting, computers and TV – not to mention the production of the food we eat.

Interviewer: You had to move into an eco-house. How did you find that experience?

Lara: Well, eco-houses are small so that you don't need much energy to build them or heat them. It was difficult to live in at first but I got used to it eventually. I realise it's not for everyone though! The house was made with modern materials that keep it warm in winter and cool in summer. All the power came from huge solar panels on the roof. Instead of using our own car, they gave us an electric car, which we plugged into the house every day.

Interviewer: Did you have to change your diet at all?

Lara: Yes! For a start, we only ate fruit and vegetables that were grown locally.

Interviewer: Why?

Lara: Well, some fresh food is transported thousands of kilometres, sometimes from the other side of the world. And it's often transported by plane rather than by ship, which produces a lot of carbon dioxide. So we tried to eat food that didn't require much energy in its production. But then – I think it was after about nine months of the challenge – we realised that our carbon footprints were getting close to a ton, so we had to stop eating meat and dairy products.

Interviewer: So, no meat or dairy products? Why?

Lara: A lot of energy is used in meat production and on dairy farms. It takes less energy to produce vegetables, beans and grains. I liked being vegetarian – in fact, I might continue as a veggie, but my dad hated it!

Interviewer: Was the challenge hard?

Lara: Not really, the eco-house made it surprisingly easy to keep our carbon footprint small. We also avoided planes and normal cars – we used bicycles and our electric car instead.

Interviewer: If it wasn't difficult, could anybody do it?

Lara: Well, the green transport was different, quite fun actually, and in general the lifestyle was fine. We had the Internet at home, but apart from computers, we didn't use much electricity – I really missed my hairdryer, though! Hairdryers use loads of electricity and we all had to give up equipment that used too much. So yes, the challenge was quite tricky. But overall, I'd say the low-carbon lifestyle was pretty cool.

3 Tell students to read through the questions and to underline key words. Ask them to discuss with a partner any synonyms they can think of for these or different ways of expressing the same idea. Elicit some ideas.

Possible answers

1 Lara, family, find, challenge, hard, green
2 largest source, Swiss families', carbon dioxide, domestic energy, car journeys, flights
3 Lara, think, eco-house, while, recommend
4 stop eating meat, dairy, not environmentally friendly, better for them, carbon dioxide limit
5 conclusion, give up too much, enjoyed, way of life

4 **2.15** The exercise provides practice for *First* Listening Part 4. Play the recording for students to answer the questions. Check answers, encouraging stronger students to explain why their chosen answer is correct. Point out that the actual Part 4 exam task has seven questions.

Answers

1 B **2** C **3** A **4** C **5** C

5 Nominate stronger students to give detailed answers before putting students into groups to discuss the questions. You could also ask them to talk about whether they would prefer to live in an eco-house or a very old house and why. Share ideas as a class.

SPEAKING Arguing for and against something

1 **2.16** Tell students that they are going to listen to a debate on an airport plan. Elicit one or two predictions for the things they might hear. Play the recording and check answers.

Answer

Luke

Audioscript

Teacher: Who was working on the airport question?

Ellie: Me and Luke, Sir.

Teacher: OK. Ellie, Luke, do you want to start?

Ellie: Yes. The scenario is that the government is planning to build a new airport near Dudley. That's about ten miles away.

Luke: Yes. There are various pros and cons, but overall I think it's a great idea. The main advantage is that we'll be able to travel abroad more easily.

Ellie: But because of climate change, the government should encourage people to cut down on the amount they fly …
Luke: Perhaps … Another factor is that the existing airport, Birmingham International, is on the east of the city. It's a really long way from Dudley and the west of Birmingham. Plus there are two and a half million people in this region, so we really need two airports.
Ellie: I agree with you up to a point, but I think it's worth bearing in mind the disadvantages as well.
Luke: Like what?
Ellie: To start with, there's the environmental impact. You know, the fuel and the carbon dioxide, and so on. Trains and buses are much greener than planes.
Luke: I know, but you can't get trains everywhere. Like across oceans. And anyway, climate change doesn't affect us.
Ellie: Climate change affects all of us. But it isn't just about that. Another factor is the noise.
Luke: What do you mean?
Ellie: Anyone who lived anywhere near the proposed airport would suffer from the noise of all the planes.
Luke: Hmm …
Ellie: If the proposal went ahead, the environmental impact could be devastating. So overall, I'm not sure that a new airport is such a good idea.
Teacher: Right, thank you Luke, Ellie.
Teacher: OK, let's take a vote on this issue.

2 Tell students to read the sentences and see if any of their ideas from exercise 1 are mentioned. Take a class vote on whether each one is a pro or a con, before playing the recording again to check answers.

Answers
1 C **2** P **3** C **4** C

3 **2.16** Read the phrases in the *Prepare* box aloud, encouraging students to copy your pronunciation. You could get them to repeat what the speakers say on the recording. Play the recording again for students to tick the phrases they hear both speakers use.

Answer
Another factor is … Overall …

4 Put students into pairs to choose a topic. Tell one student to list the pros and their partner to list the cons.

Possible answers
living in an eco-house: better for the environment, cheaper energy bills, might not have a reliable energy supply
only allowing electric cars: cars cleaner and quieter, there might not be enough charging points, cars often slower
being vegetarian: meat is important to a lot of people, diet is more limited, better for the environment
bike lanes next to every road: less traffic on the road, often quicker for short journeys, could be dangerous, roads not wide enough in some places
banning aeroplanes: makes foreign travel and trade difficult, less noise and pollution
making recycling compulsory: less waste, difficult to set up, recycling is not always energy-efficient

5 Put pairs together with other pairs who also looked at the same topic to make groups of four or six. Ask each group to divide itself into 'for' and 'against' groups with half the students in each. Tell them to prepare their arguments and to think of counter-arguments their partners are likely to make. Ask students to stand on one side of the classroom if they agree and the other if they disagree. Then group or pair them with someone who has the opposite view, and tell them to debate the topic.

6 Nominate one or two groups to perform their debate. Ask the class to decide which group they think is the winner and why.

Cooler
Ask students to work with a partner and to write down six new words from this unit on a piece of paper. Take in the sheets and redistribute them around the class. Put students into groups of four, making sure each group has two sheets. Each pair should choose one person to guess and one person to explain the words. While one pair is having their turn, the other pair should time one minute. The winning pair is the one to explain and guess the most words in a minute.

Project
Ask students to use the internet to research ways in which they can save energy. Tell them to make three energy-saving resolutions for a week, e.g. cycling to school, not leaving things on standby, having shorter showers, picking up litter. They should report back in small groups on how successful they were at sticking to their resolutions.

Teacher's resources
Student's Book
Grammar reference and practice page 153
Vocabulary list page 135
Video
Climate change
Workbook
Unit 16, page 64
Go online for
- Pronunciation
- Progress test
- Achievement test
- Video extra worksheet
- Corpus tasks

Chemistry

Fossil fuels

Learning objectives

- The students find out more about fossil fuels and the damage they do to the environment.
- In the project stage, students produce a report detailing information about an alternative energy source.

Warmer

1 Divide the class into teams of six. Read these questions aloud and tell students to answer them in their teams:

1 *Did the fossil fuels we use today begin forming before or after the age of dinosaurs?*
2 *What percentage of energy comes from fossil fuels around the world?*
3 *What does natural gas smell of?*
4 *How much coal is needed to run a 100-watt light bulb 24 hours a day for a year?*
a *325 kg* **b** *a tonne (1000 kg)* **c** *10 kg*
5 *Which country is the biggest oil-producing country in the world?*

Answers

1 before **2** 81% **3** It has no smell **4** a **5** Russia

2 Check answers. The winning team is the one with the most points. If it is a tie, ask the following tiebreaker question. The first team to answer correctly is the winner.

Which country produces the most renewable energy as a percentage of their total energy use? (Denmark, 45%)

1 Put students into pairs to discuss the questions. Then give them just 30 seconds to check their answers in the text. Check answers.

Answers

Coal, oil and natural gas are examples of fossil fuels. When they burn, they create carbon dioxide, which contributes to the greenhouse effect and climate change. Their use also destroys the natural environment through acid rain, damage to plant and animal life, and oil spills.

2 Encourage students to cover the box and try to complete the sentences without looking at it. They can then look back at the box to help them complete any remaining sentences. Allow students to compare their ideas with a partner before checking as a class.

Fast finishers

Ask fast finishers to think of three reasons why fossil fuels are still much more common than renewable energy. Elicit some ideas after checking answers to exercise 2. Possible answers may include public opposition to wind farms, the cost of solar panels, and that fossil fuels are ready-made fuels.

Answers

1 fossil fuels **2** energy **3** carbon **4** carbon dioxide
5 climate change **6** pollution

3 Put students into groups of four, and tell each student to choose a different question. Once they have thought about their explanation, they should share it with their group. After a few minutes, elicit some ideas from the class.

Mixed ability

Encourage weaker students to read the last section of the text again, before doing exercise 3. Stronger students can answer the questions without referring back to the text.

Extension activity

Tell students to make posters about the different fuels mentioned in the text. They should include information on how the fuel is produced/used and what the advantages and disadvantages of each fuel are. Ask each group to present their poster to the class.

Answers

1 Digging and drilling can destroy the landscape.
2 Chemicals react with water in the air, leading to acid rain, which damages soil.
3 Burning fossil fuels creates toxic chemicals which are dangerous for our health.
4 If there is an oil spill, birds and animals are harmed.

4 ▶ **2.17** Tell students that they are going to listen to a programme on alternative forms of energy. Before they listen, write these words on the board: *wood, sun, turbine, farm, panel, roof, offshore, methane, heat, river, ocean, liquid, waves* and ask students to group them into these categories: *hydroelectric power, solar power, biofuel, wind power*. Play the recording and check answers.

Answers

1 b **2** d **3** a **4** c

Audioscript

John: Hello, this is John McGregor and welcome to *Science Forum*. Today, Emily Page and I are talking about alternative forms of energy. At present, about eighty-one per cent of the world's energy comes from hydrocarbons such as coal, oil and natural gas. As we all know, the use of fossil fuels is not good for us or for the environment.

Emily: Exactly, John. And what's more, we know that fossil fuels will run out one day, so there's an important question to be answered: what alternative sources of energy might replace them in the future? At the moment, there are four types of alternative energy that are becoming more common.

John: Yes, for example, the most common alternative energy nowadays is solar power. This is power that we get from the sun. It has the advantage of being clean, since it doesn't create any pollution, and of course it won't run out. To use the sun's energy, we put solar panels on the roofs of buildings or out in the countryside. These panels use sunlight to heat water or generate electricity that we can use.

Emily: Another typical alternative energy is wind power – that is, energy we get from the wind. Like solar energy, it's both clean and renewable. To generate power, we use machines called turbines that turn in the wind. There are small turbines that provide energy for single homes, and large turbines that we may see in the countryside, at wind farms. In some countries, like the UK, there are also offshore wind farms in the sea, near the coast.

John: Along the same lines, a third source of clean, renewable energy is hydroelectric power. It's produced by underwater turbines in large rivers. The moving water turns the turbines to create electricity. Hydroelectric turbines can also be used in the ocean. They use the movement of waves to generate power.

Emily: And finally, a fourth source of energy that is becoming more common these days is biofuel, which comes from a variety of plant products. They include solid materials, such as wood, as well as liquid fuels, like biodiesel for cars. We can also use plant products to make biogas, like methane, to heat our homes and other buildings.

John: Which of these four alternative forms of energy seem most useful to you? Call in now, and give us your opinion.

5 2.17 Ask students to read the sentences and to work with a partner to predict which ones are true and which ones are false. Play the recording again and then check answers. Tell students to correct the false sentences.

Answers

1 False. It comes from hydrocarbons. **2** True **3** True
4 False. They can also be installed in the ocean. **5** True

Cooler

Tell students that there are many gyms where the energy is provided by the people using the gym. The machines they use generate the energy the gym needs. Put students into small groups to think of other ways that everyday items could be used to generate renewable energy, e.g. using laptop heat. Ask each group to nominate a spokesperson to tell the class about their ideas.

Project

This project can be done in class if you have internet access or set as homework. Tell students to complete the research in small groups and to give a presentation in the following class, using either PowerPoint or a poster. Encourage the rest of the class to ask questions after each group has finished.