

Engineering/Technology: Electric vehicles

Reading skills: Reading and noting main points; Evaluating points

Writing skills: Presenting a balanced argument

1 SPEAKING

a Look at the kinds of transport below. How much CO₂ do you think they produce for each passenger? Write a list from 1 to 7 (1 = most CO₂, 7 = least CO₂).



car (driver only) ____



bike ____



train ____



bus (between cities) ____



bus (in town) ____



plane ____



car (with four passengers) ____

b Compare your answers with other students. Then check your answers on page 20.

c Discuss the questions.

- Which kinds of transport did you use in the last year?
- Which do you often use? Which do you never use?

2 READING

a Read the article about electric cars. Choose the sentence which gives the best summary.

- Electric cars are better than petrol cars and everyone should get one.
- Electric cars are better than petrol cars in some ways, but there are also problems with them.
- In general, petrol cars are better than electric cars.

b Read the article again. Which of these points does it make about EVs?

- ☐ They cost a lot to buy.
- ☐ They're expensive to drive.
- ☐ They're good for long journeys.
- ☐ They produce a lot of CO₂ when you drive them.
- ☐ They're quiet.
- ☐ They aren't as 'green' as some people think.
- ☐ The batteries need special materials.

c Which points about EVs do you think are important? Why / Why not?

3 LANGUAGE FOCUS Listing advantages and problems

a Cover the article and look at the sentences. What order do you think they come in? Add numbers 1–5. How did you know the answer?

- ____ Also, EVs are cheap to drive.
- ____ Another problem is that EVs are not completely 'clean'.
- ____ There are problems with electric vehicles, too.
- ____ They have many advantages: you don't need to buy petrol for an EV.
- ____ One problem is that they're expensive to buy.

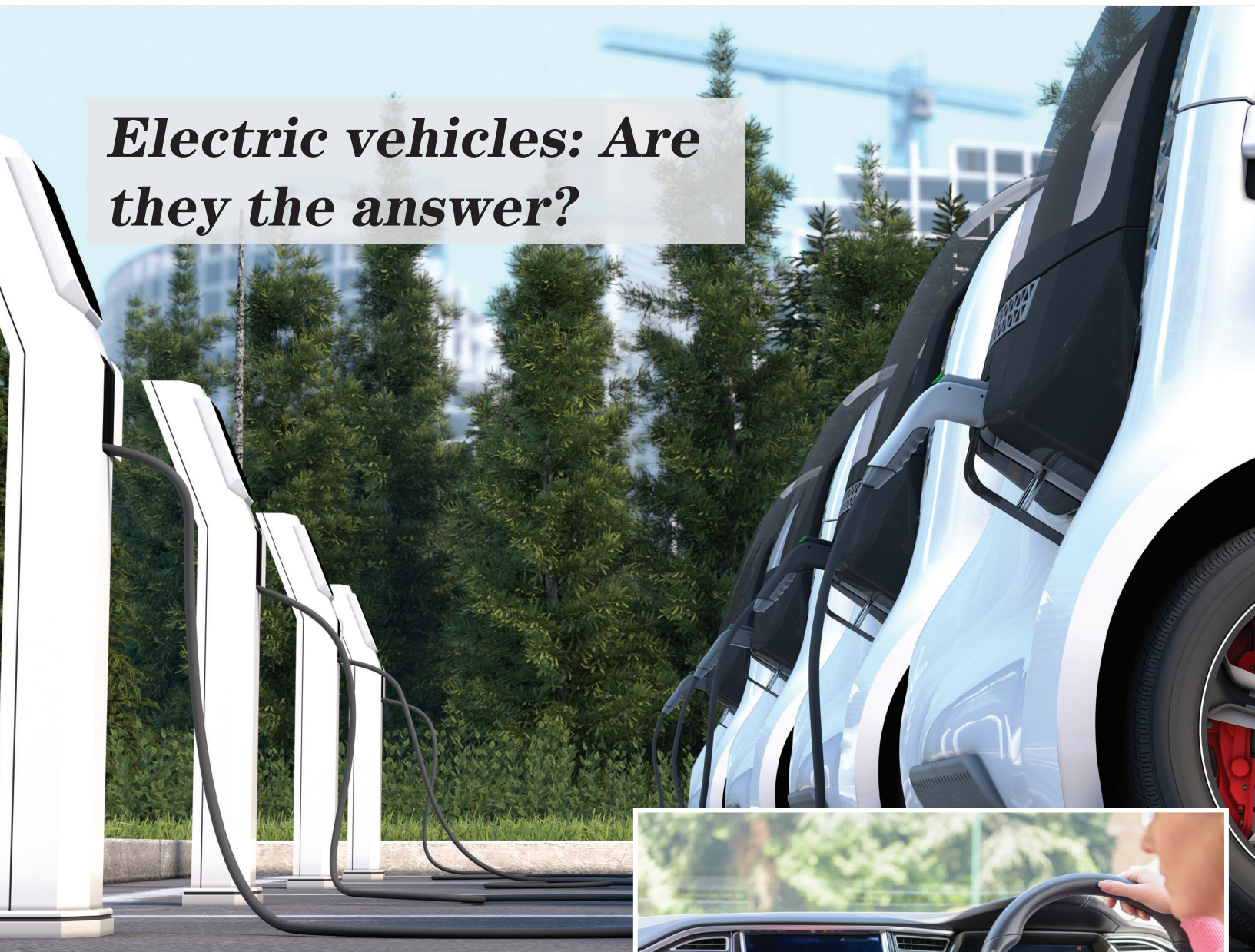
b Look at the article and check.

c Read the text below about hybrid vehicles and complete the gaps with one word from the box.

advantage also another
many problems

Some people choose to drive 'hybrid' vehicles – that is, vehicles which can use either petrol or electricity. They have ¹ ____ advantages. The main ² ____ is that you can use electricity in the town, but then change to petrol when you want to drive fast on a motorway. ³ ____, they are good for long journeys because you don't need to charge the battery. However, hybrid vehicles also have ⁴ _____. Like electric vehicles, they're expensive to buy. ⁵ ____ disadvantage is that, because they use petrol, they produce CO₂.

Electric vehicles: Are they the answer?



We all know that cars cause pollution and produce CO₂, but everyone agrees that they are very useful. Most people want to have a car and some people need to use a car for work or to get around.

Many people believe that electric vehicles (or EVs) are the answer to this problem. They have many advantages: you don't need to buy petrol for an EV, so they're clean and they don't produce CO₂. Also, EVs are cheap to drive. In the USA, driving an EV costs \$485 a year on average, but driving a petrol car costs \$1,120. Another advantage is that they don't make much noise, so a street full of electric vehicles in a city will be quiet and the air will be clean.

However, there are problems with electric vehicles, too. One problem is that they are expensive to buy because they need a large battery and that costs a lot of money. Also, you can only drive for about 150 kilometres, then you have to stop and charge the battery. This may take between one and a half and four hours, so they are good for short journeys, but not so good if you want to drive far.



Another problem is that EVs are not completely 'clean'. EVs use electricity, and if the electricity comes from oil or gas, that produces CO₂ somewhere. Also, the batteries need metals like lithium. People have to get these metals (mainly from Australia, Chile and China) and move them across the world, so that also causes pollution and produces CO₂.

d CRITICAL THINKING

SPOKEN AND WRITTEN LANGUAGE

Look at the spoken comment and the written paragraph. Which one ... ?

- 1 has longer sentences 2 uses more informal words

Spoken comment:

'EVs are great. They're clean. They're cheaper to drive than normal cars, too. And they're really quiet.'

Written paragraph:

EVs have many advantages. They don't pollute the air and they are cheaper to drive than normal cars. Another advantage is that they are very quiet.

- e Look at these people's comments. Write each one as a short paragraph (2–3 sentences). Use expressions from the box to help you.

... has many advantages ... have many problems
One/Another advantage of ... One/Another problem is ...
Also, ... The main disadvantage with ...

1 *'Cycling's really good. It's healthy, you don't have to find a place to park. And it's free!'*

2 *'I don't like e-scooters. They're dangerous and you can't use them in bad weather – and people go much too fast on them!'*



4 WRITING

- a Work with another student. Choose another kind of transport and discuss what advantages and problems it has. Think about the ideas below and make brief notes.

- fast
- crowded
- easy to get to places
- comfortable
- 'green'
- clean
- expensive

STUDY SKILLS: MAKING NOTES

Look at these notes for the paragraph in 3c about hybrid cars. What do they include? Write *Yes* or *No*.

- 1 nouns ____ 4 *a* and *the* ____
2 pronouns ____ 5 complete sentences ____
3 adjectives ____ 6 important words ____

Hybrid cars

advantages:

1. electricity in town, petrol on motorway
2. good for long journeys

problems:

1. expensive
2. produce CO₂

- b Together, write a paragraph based on your ideas from 4a. Try to include expressions from 3a and 4a.

- c Pass your paragraph to another pair, then read what other students have written. Do you agree with them?

source: BEIS/Defra Greenhouse Gas conversion Factor 2019

- 7 bike: 0g per km
6 bus (between cities): 27g per km
5 train: 41g per km
4 car (with four passengers): 43g per km
3 bus (in town): 104g per km
2 plane: 133g per km
1 car (driver only): 171g per km

Answers: