

# 6 Appliance of science

- Grammar** ▶ The passive ▶ *Have something done*  
**Vocabulary** ▶ Everyday inventions ▶ Operating technology  
 ▶ Prepositional phrases with adjectives  
**Speaking** ▶ A debate  
**Writing** ▶ A *for and against* essay

## ▶ Vocabulary

### Everyday inventions



**1** Match 1–8 with a–h to make everyday inventions.

- |             |           |
|-------------|-----------|
| 1 digital   | a machine |
| 2 mobile    | b camera  |
| 3 microwave | c control |
| 4 dish      | d oven    |
| 5 vacuum    | e phone   |
| 6 remote    | f washer  |
| 7 DVD       | g cleaner |
| 8 washing   | h player  |

**2** Which inventions from 1 are described in these definitions?

You use it to:

- 1 control something such as a television from a short distance away.  
.....
- 2 cook food very quickly without using heat.  
.....
- 3 wash plates, cups, knives and forks.  
.....
- 4 take photos.  
.....

**\*3** Choose four of these words and write your own definitions. Then use a dictionary to check your answers.

camcorder laptop mobile phone satnav  
vacuum cleaner washing machine

- 1 .....
- 2 .....
- 3 .....
- 4 .....

**4** Choose the correct alternative.

- 1 It's never a good idea to plug in/select a machine with wet hands.
- 2 Select/Insert the long wash if your clothes are really dirty.
- 3 I usually plug in/charge my mobile overnight.
- 4 How do you connect/insert the camera to the laptop?
- 5 Press fast forward/play if you don't want to see the adverts at the beginning.

1 What is a *myth*?

- a something that you don't understand.
- b something that people believe is true but isn't.
- c an extremely large number of people.

2 Read the text and check your answer.

## Science or myth?

### The five-second rule

Some people think that it is not dangerous to eat food that is dropped on the floor if it is picked up quickly. Not true! Even a clean floor has germs that will stick to your food as soon as it touches them. However, it is not always harmful to eat germs because they can help to strengthen the system our bodies use to protect us against diseases.

### Brain cells can't grow again

For a long time, scientists said that brain cells can't regenerate: if you kill a brain cell, it is never replaced. New cell growth was thought to be impossible, and this was the reason for memory loss and confusion in illnesses like Alzheimer's or in old age. However, scientists in California discovered that the part of the brain which controls memory and learning can, after all, create new cells.

### Danger money

Many people believe that if you are hit on the head by a coin that is dropped from the top of a skyscraper, you will be killed by the impact. This is quite believable, but it is not true. A study of the aerodynamics of a coin will show that it will not drop fast enough to be dangerous. A person who was hit would probably feel something like an insect bite but they certainly wouldn't die as a result.

### Lightning never strikes twice

It is often said that lightning never strikes the same place twice. But lightning can and does strike the same place more than once. Indeed, research has shown that it happens very frequently. Because lightning strikes tall structures or buildings, the highest place in an area is often struck several times in a few seconds. The Empire State Building in New York, the Hancock Building in Chicago and the CN Tower in Toronto are all hit many times every year.



3 Find words in the text which mean:

- 1 forms of bacteria that spread disease (*paragraph 1*)
- 2 to develop or make something again (*paragraph 2*)
- 3 the organ inside your head that controls your body (*paragraph 2*)
- 4 the force of one object hitting another (*paragraph 3*)
- 5 the science of how things move through the air (*paragraph 3*)
- 6 attack or hit (*paragraph 4*)

4 Choose the correct alternative.

- 1 Germs can stick to food that is dropped on the floor/used to protect us.
- 2 Adult brain cells can be/used to be replaced by new ones.
- 3 An illness like Alzheimer's probably damages memory/creates new cells.
- 4 It is commonly believed that picking up/being hit by a falling coin will kill you.
- 5 If a falling coin hit you, you would be OK/never survive it.
- 6 The tallest buildings in the world are unlikely to be/regularly struck by lightning.

5 Answer the questions.

- 1 In line 6, what is *them* in: '... as soon as it touches them'?
- 2 In line 11, what does *it* refer to in: '... it is never replaced'?
- 3 What does *it* refer to in line 21: '... it will not drop fast enough'?
- 4 In line 31, what does *it* refer to in: '... it happens very frequently'?

\*6 What about you?

Which of these myths have you heard of before? Do you know any others?

---

---

---

---

---

---

---

---

---

---



## The passive

### 1 Choose the alternative to make the rule correct.

We form the passive with the verb (a) *to be/to have* + the (b) *past simple/past participle* form of the main verb. We use it when we are more interested in the (c) *agent/action* than in the (d) *agent/action*, that is, the person or thing which does the action. We use the preposition (e) *by/from* to talk about the agent. We also use the passive when we (f) *know/do not know* exactly who the agent is, or when it is (g) *obvious/not obvious* who the agent is.

### 2 Complete these passive sentences with the correct form of the verb *to be* and the verbs given.

- (sell) This wonderful gadget was first sold in 1897.
- (publish) This journal ..... still ..... twice a year.
- (do) Some very interesting research ..... already ..... on Alzheimer's.
- (win) Do you think the prize ..... by the same person again next year?
- (invent) The first automatic dishwasher ..... by a woman.
- (use) Look! Plant extracts ..... to make these cosmetics.

### 3 Choose the correct alternative.

- If food dropped/is dropped on the floor, it will be unsafe to eat.
- The first prize was gave/given to Chris McCarroll.
- Languages are/have been learned this way for hundreds of years.
- We taught/were taught by university graduates.
- These myths have been/are believed for a long time now.
- How many times has that man been bitten/bitten by his dog?

### 4 Rewrite these sentences in the passive.

- An undercover policeman arrested the criminal.  
The criminal was arrested by an undercover policeman.
- Anna Williams is reading the news tonight.  
The news .....
- The Japanese team has already published the best research.  
The best research .....
- A student will meet the visiting professors at the station.  
The visiting professors .....
- A British journalist wrote a book called *Bad Science*.  
A book .....

## Grammar extension

### 5 What do you know? Match the invention to the inventor. Then write sentences in the passive about them.

dynamite

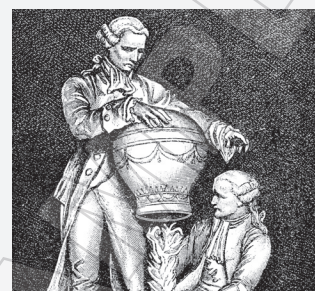
locks

antiseptic

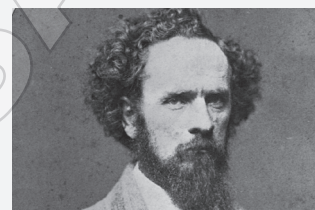
the first hot air balloon

reading system for the blind

bicycle tyre



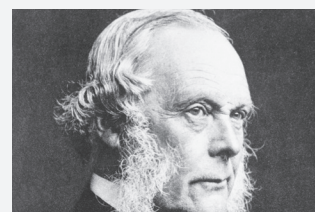
Montgolfier brothers, France, 1783



Linus Yale, USA, 1851



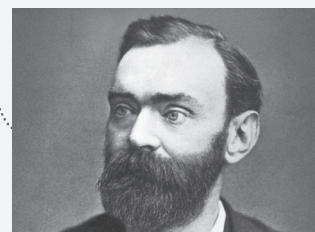
John B Dunlop, Northern Ireland, 1888



Joseph Lister, England, 1867



Louis Braille, France, 1829



Alfred Nobel, Sweden, 1866

1 Dynamite was invented by Alfred Nobel from Sweden in 1866.

2 .....

3 .....

4 .....

5 .....

6 .....

## Prepositional phrases with adjectives

- 1** Complete the sentences with an adjective from box 1 and a preposition from box 2.

afraid aware bored different good interested  
pleased ready responsible similar tired worried

about at for from in of to with

- 1 Harry was not very ..... literature.
- 2 Are you ..... the dangers of cycling without lights?
- 3 Kitchens today are very ..... kitchens a hundred years ago.
- 4 This dishwasher is ..... getting things clean, but it's noisy.
- 5 The children were not at all ..... the science museum's new exhibition.
- 6 See a doctor if you're ..... that pain in your leg.
- 7 I'm ..... the adverts, let's fast forward to the film.
- 8 She is ..... walking alone at night.
- 9 Air travel is ..... a lot of carbon emissions.
- 10 Their research was ..... ours, but theirs was shorter.
- 11 I'm not ..... lunch. I only had breakfast an hour ago.
- 12 They were very ..... their new camcorder.

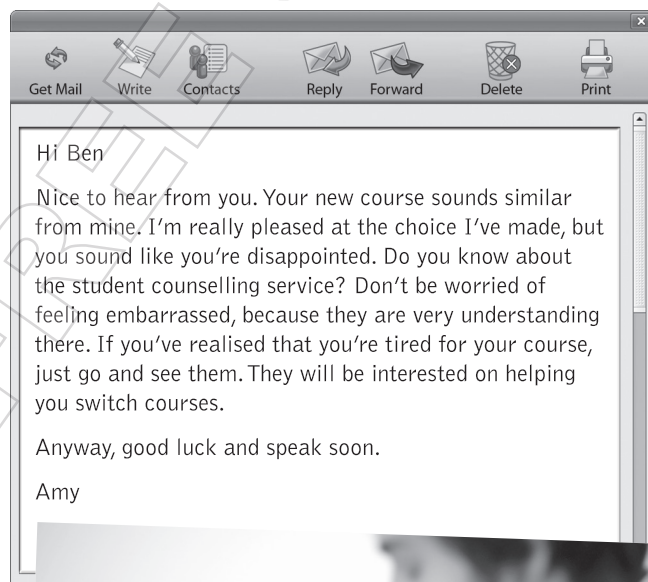
- \*2** Write a sentence about ...

- 1 something you are interested in  
.....  
.....
- 2 something you are responsible for  
.....  
.....
- 3 something you've been pleased with  
.....  
.....

- 3** Complete the sentences with the correct adjective from 1.

- 1 The sisters have always been extremely ..... at maths.
- 2 He is usually out of bed and ..... for school by 7 am.
- 3 At home, my brother is ..... for loading the dishwasher.
- 4 My dad is ..... of spiders.
- 5 I'm very ..... from the rest of my family.

- \*4** Read the email. Find and correct five mistakes.



## Vocabulary extension

- 5** Match 1–9 with a–i to make sentences.

- 1 My uncle was very fond
- 2 I'm not very keen
- 3 Hilary was amused
- 4 The teacher wasn't very impressed
- 5 The old woman was shocked
- 6 Most parents are proud
- 7 We feel sorry
- 8 I don't think my shoes are suitable
- 9 Children are dependent

- a for you all at this sad time.
- b for walking in the rain.
- c of their children's achievements.
- d with the student's poor exam results.
- e on their parents until they're 18.
- f on eating food that's been on the floor.
- g of eating chocolate when he was a child.
- h by that funny story you told her.
- i by the language used in the film.

## Have something done

### 1 Complete the grammar rule with these words.

does don't formal *have or get* object  
past participle preposition subject

We form *have/get something done* with the (a) .....  
+ *have or get* + the (b) ..... + the  
(c) ..... We make different tenses by changing the  
tense of (d) ..... We use this structure to talk about  
actions which we (e) ..... do ourselves. Somebody or  
something (f) ..... them for us. *Get* is a little less  
(g) ..... than *have*. Both can be used with the  
(h) ..... *by* if we want to refer to the person or thing  
that does the action.

### 3 Look at the pictures and complete the questions with the correct form of *have or get*.



1 When did you last ..... ?



3 When did you last ..... ?

### \*4 Now write full answers to the questions in 3 so they are true for you.

- 1 .....
- 2 .....
- 3 .....
- 4 .....

### 2 Match 1–6 with a–f to make sentences.

- |                                  |  |
|----------------------------------|--|
| 1 He can't read the small print  | a so we're going to have it serviced.    |
| 2 The car won't start            | b because she's not very good at baking. |
| 3 Our house is too small         | c by the same guy that cleans ours.      |
| 4 You can't wash this skirt      | d so we're getting an extension built.   |
| 5 She had the cake made          | e so he's getting his glasses changed.   |
| 6 They get their windows cleaned | f so you'll have to have it dry cleaned. |



2 Where did you last ..... ?



4 How often do you ..... ?

### Grammar extension

### \*5 Imagine that you have a robot that works for you. Write five sentences to describe what you are going to have/get done.

- 1 *I'm going to get my car cleaned by the robot.*
- 2 .....
- 3 .....
- 4 .....
- 5 .....
- 6 .....



## A debate

### 1 Match 1–5 with a–e to make expressions for agreeing.

- |              |                  |
|--------------|------------------|
| 1 That's     | a what you mean. |
| 2 You're     | b true.          |
| 3 You've got | c your point.    |
| 4 I take     | d right.         |
| 5 I see      | e a point.       |

### 2 Read the statements 1–5 and match each with one of the responses a–e.

- 1 I can see nothing wrong with modern medicine. Recent advances have only made life better for everyone.....
  - 2 Tennis is the greatest sport in the world. There's no other sport that compares to its excitement.....
  - 3 Everything has already been invented. There's nothing more for us to do.....
  - 4 Mobile phones are fantastic. Nobody could live without one these days.....
  - 5 Cycling is a waste of time. Everyone should learn to drive a car.....
- a I see what you mean, but I think there *are* more things we can do. What about finding a cure for cancer, for example?
  - b That's true, a driver's licence can be very useful, but I don't think it is a waste of time to have a cheaper, greener way of getting around.
  - c I take your point, but what about Formula One? That's just as exciting in my opinion.
  - d You've got a point, but it is wrong that only the rich countries can afford the best drugs, don't you think?
  - e You're right and I wouldn't like to live without mine. But, actually, about 40% of the world's population hasn't got a mobile phone.

### 3 Complete the dialogue with these expressions.

I mean    I see what you mean, but ...    you've got a point  
I totally disagree with you    That's true

**LIZ:** I've just read this amazing book that will change your life, it's about superfoods!

**SAM:** Oh yeah? Like tuna and olive oil? I don't believe in superfoods. Food's food, isn't it?

**LIZ:** No. **(a)** ..... It's obvious that some food is better for you than other food.  
**(b)** ....., fruit's better for you than chocolate, isn't it?

**SAM:** **(c)** ....., but why not eat a bit of both? I think a mixed diet is a healthy diet.

**LIZ:** Yes, **(d)** ..... But it's been proven that school children who drink fizzy chemical drinks concentrate less in class than kids who drink milk.

**SAM:** **(e)** ..... you can't say that any particular kind of food is the best, only that too much of one kind of food isn't good for you.

## Describing photos



### 4 Look at the photo and answer the questions. If you are not sure of something, say *I think* or *I imagine*.

1 What can you see in the photo?

.....  
.....

2 Who can you see in the photo?

.....  
.....

3 What are they doing?

.....  
.....

4 Where was the photo taken?

.....  
.....

5 When was it taken?

.....  
.....

6 Why has the man chosen this form of transport?

.....  
.....

### \*5 Look at the statement and say if you agree or disagree. Write three reasons to support your opinion.

"People who do not believe in modern technology are right to live without cars, electricity or computers. These people do no harm to anybody."

A for and against essay

1 Look at these notes about television, and put them into two columns, for and against.

stops people reading, listening to music and talking  
fascinating programmes e.g. nature, culture  
company for lonely people  
advertising – bad influence  
unsuitable programmes for children  
educational e.g. language learning  
relaxing e.g. makes people laugh

| For | Against |
|-----|---------|
|     |         |

2 Read this essay about television and decide on the correct order of the four paragraphs A–D.

A 3  
However, television has disadvantages too. People no longer read, listen to music or talk to each other because the TV is always on. What’s more, there are hundreds of channels available and many of them are unsuitable for children. In addition, television advertising can be bad because it encourages viewers to want lots of things they don’t really need. Personally, I think this can be very dangerous, for example, during children’s television time when they advertise expensive toys or gadgets.

B  
In the early 1950s, very few people had a television. By the end of the century, almost every household in the western world had at least one television set, and many had several. Is this a good or a bad thing?

C  
In conclusion, television is not necessarily a bad thing but parents should be careful how much their children watch. In my opinion, good programmes that are well made are fantastic but, on the other hand, they do prevent people from taking part in other activities and some of the output is unsuitable for children, in particular.

D  
Television can be interesting and useful in a number of ways. Firstly, nature or cultural programmes are often fascinating, and viewers can experience places and events they might never see in real life. Furthermore, soaps or comedy programmes can make people laugh and allow them to relax after a hard day at work. What’s more, many programmes are educational and can help students of foreign languages, for example. Finally, television is a comfort to old people or people who live on their own.

3 Which statement do you think was given to the writer of this essay?

- a Children today watch too much television.
- b Television advertising is more important than the programmes.
- c The advantages and disadvantages of television.

4 Underline the linkers that introduce and order the arguments the writer used.

5 Find two expressions the writer uses to express opinions.

- 1
- 2

\*6 Plan an essay on this statement.

“The invention of the Internet is the best thing that has ever happened.”

Make notes for and against, and organise your ideas into the paragraphs below.

| For | Against |
|-----|---------|
|     |         |

Paragraph plan

- Paragraph 1: introduce the content of your essay
- Paragraph 2: two arguments for the Internet
- Paragraph 3: two arguments against the Internet
- Paragraph 4: conclude your essay

Write the essay using linkers and other expressions from this unit. Don’t forget to say if you agree or disagree with the given statement and give your reasons.

- 1 Look at the picture below and read the replies to the three exam questions (ignore the gaps).



1. What .....?

It looks as if the robot is putting the girl to bed. The girl is probably afraid to be in her room alone at night and her parents might be too busy to sit with her so the robot is keeping her company. (a.) ..... the robot is reading a book to the girl or playing her some music. The girl looks happy so the robot is definitely doing a good job.

2. What .....?

(b.) ....., I think we can really well do without robots. However, if we are to use them, I guess, they could help us to do different household jobs that we don't like doing or don't have the time to do, like cleaning up or ironing. They definitely shouldn't be used to keep people company or to replace people's friends and relatives. What's more, they shouldn't be used for tasks which may have dangerous consequences for human beings.

3. Tell us .....

The last time I played with a robot was at Christmas. Pingo, a tiny interactive toy, was my brother's Christmas present. It was so cute that everybody at the table wanted to play with it for at least a few minutes. It could connect us to facebook and other networking websites, announce e-mails and even read the news out loud. I even bribed my brother with chocolate to let me play with Pingo for longer. I was using it for about 10 minutes when it suddenly stopped responding to my commands. I panicked because I thought it had broken down. (c.) ....., it turned out, that I had only accidentally switched it off.

#### Which reply

- gives an interpretation of the situation in the picture? .....
- gives the speaker's opinions? .....
- describes a past event? .....

- 2 Write an exam question for each reply from 1.

- 3 Which expressions could be used to complete the gaps in the replies from 1?

Finally Fortunately As soon as It's also possible that  
To be honest It seems/appears to be It was (a month ago)  
I really like ... because

- 4 Write your reply to the last question from 1. Use expressions from 3.

.....

.....

.....

.....

.....

.....

.....

.....

- 5 Read another reply reporting a past event. Choose the correct verb forms.

It (1.) had been / was / has been a month ago. A friend of mine (2.) had been visiting / visited / has visited me with his new dog. The dog (3.) didn't be / wasn't / hasn't been too big and looked really clean and cute. While we (4.) were having / had been having / had coffee, the dog (5.) sat / was sitting / had sat quietly under the table. I (6.) were / had been / was surprised to see such a quiet well-behaved puppy. When I (7.) had patted / had been patting / patted it on the back, it (8.) licked / was licking / had been licking my hand, but to my surprise, its tongue was dry. I told my friend that it (9.) didn't be / weren't / wasn't normal and suggested taking the dog to the vet. It was then that my friend started laughing and told me that it wasn't a real animal, but a robotic pet that he (10.) was getting / has got / had got for his birthday two weeks before.

#### ► Zadanie egzaminacyjne

- 6 Opisz zdjęcie, a następnie odpowiedz na trzy pytania. Wykonaj zadanie pisemnie.



- 6.1. Why isn't a human doing the job?  
6.2. Will robots take over the world one day?  
6.3. Tell us about the last time you felt as though you were a robot.

.....

.....

.....

.....

.....

.....

.....

.....



# Revision: Units 5–6

## Grammar

### 1 Complete the sentences with these words.

can can't don't have to have to must mustn't

- There's no school tomorrow so I ..... do any homework tonight.
- You ..... copy your answers straight off the Internet, it's not allowed.
- I ..... come today but I can tomorrow.
- I ..... finish this homework tonight for my class tomorrow.
- She ..... write more clearly or the examiner won't mark her paper.
- The teacher said I ..... have an extra week to finish the essay.

/ 6 points

### 2 Choose the correct alternative.

- Louisa should talk/to talk to her teacher about her results.
- I think you ought work/to work a bit harder next term.
- We would/had better not be late for the interview.
- The boy who cheated shouldn't/hadn't better win a prize.

/ 4 points

### 3 Complete the sentences with the verbs given in the first or second conditional.

- The examiner ..... (not be) pleased if you started singing during your exam.
- If you ..... (not go) to university, what will you do?
- Bill ..... (learn) to fly if he had time.
- What would they say if we ..... (tell) them to be quiet?
- I ..... (help) you with your homework if you want me to.

/ 5 points

### 4 Rewrite these sentences in the passive.

- They sell thousands of illegal copies of DVDs every day.  
.....
- They will hold the next Olympics in my own country.  
.....
- Someone bought that satnav for our grandmother to use.  
.....
- Somebody has finally fixed my computer.  
.....
- They don't often teach Latin in schools these days.  
.....

/ 10 points

**Total**

/ 25 points

## Vocabulary

### 5 Complete the words with the missing vowels (a, e, i, o, u) to make the names of school and university subjects.

- b \_ \_ l \_ \_ gy
- l \_ \_ t \_ \_ r \_ \_ r \_ \_
- \_ \_ ng \_ \_ n \_ \_ r \_ \_ ng
- m \_ \_ d \_ \_ c \_ \_ n \_ \_
- g \_ \_ \_ gr \_ \_ phy
- h \_ \_ st \_ \_ ry

/ 6 points

### 6 Choose the correct alternative.

- I'm afraid you only got 34% so you'll have to cheat/resit the exam.
- She has studied hard, so she'll get a good mark/fail.
- Look at your timetable/continuous assessment and see what lesson is next.
- When he gets a grant/certificate, he hangs it on the wall.
- They prefer to do coursework/scholarships because they don't like exams.

/ 5 points

### 7 Add the suffixes -er, -or, -ist, -ian and -ee to these roots to create correct words. Two roots can be used twice.

employ- histor- instruct- journal- lectur-  
photograph- profess- scient- train- technic-

| -er | -or | -ee | -ist | -ian |
|-----|-----|-----|------|------|
|     |     |     |      |      |

/ 5 points

### 8 Label these pictures.



/ 4 points

### 9 Complete the sentences with the correct preposition.

- She is responsible ..... taking care of the kids.
- How we listen to music is different ..... the way you used to do it.
- Are you aware ..... the phrase 'lightning never strikes twice'?
- I'm tired ..... this programme. What's on the other channels?
- She's worried ..... breaking her MP3 player.

/ 5 points

**Total**

/ 25 points

## Reading

1 Read this text. What might happen to drivers if roads didn't have cat's eyes?

# What are cat's eyes?



Cat's eyes are a cheap and effective invention that mark roads without lights. They are fixed to the middle of roads and help drivers see the road when there are no streetlights. Cat's eyes reflect cars' lights, so they make it easier for drivers to see in bad weather or at night. You can see cat's eyes 90 metres away, which makes driving much less dangerous.

### Who invented cat's eyes?

Percy Shaw invented cat's eyes in the 1930s. He lived in Halifax, England, where fog was common. Like many inventions, there are several stories about how Shaw had his brilliant idea. One romantic story is that Shaw invented the cat's eyes when he saw a cat sitting beside the road. Shaw was driving in the fog, and his headlights reflected from the eyes of the cat which saved him from an accident. That, they say, is how the invention got its name.

### How do cat's eyes work?

Cat's eyes are made from two glass spheres, which go down into a metal box in the road when a car drives over them.

These spheres do not break because they push against soft white rubber. But they do make a sound as a car drives over them. This is useful because it warns drivers that they are driving into the middle of the road.

### Colour codes

Cat's eyes in the centre of the road are white. On motorways, red cat's eyes mark the inside lane. Green cat's eyes show where a smaller road leaves or joins the motorway. Blue cat's eyes mark the places on the motorway that only the police can use. These colour codes are more recent inventions, but the original idea is still the same as Shaw designed all those years ago.

2 Choose A, B or C.

- 1 Cat's eyes reflect the light from cars
  - A because they are safe.
  - B where there are no street lights.
  - C in the daylight or bad weather.
- 2 Cat's eyes are fixed in the middle of a road
  - A so drivers can see other cars.
  - B every 90 metres.
  - C to make the roads safer.
- 3 Some people believe Shaw's invention is called cat's eyes because
  - A he heard a story about a cat in the fog.
  - B it looks like a cat.
  - C his invention reflects light like a real cat's eyes.
- 4 Cat's eyes are made of
  - A metal and glass.
  - B rubber and metal.
  - C rubber, metal and glass.
- 5 If you drive over cat's eyes,
  - A they produce a warning light.
  - B there is a warning sound.
  - C you simply kill the cat.
- 6 Cat's eyes on motorways are
  - A blue and red
  - B green and blue.
  - C blue, red and green.

/ 7 points

## Writing

3 Write a short essay giving arguments for or against the statement below. Remember to give your own opinion. Use these questions and your own ideas.

'The car is the most important invention ever.'

Why do you agree (or disagree) with the statement?

What is the best (or worst) thing about cars?

What would be better (or worse) today if cars had never been invented?

What good (or bad) future events will happen because of cars?

---

---

---

---

---

---

---

---

---

---

/ 8 points

**Total**

/ 15 points