

## READING COMPREHENSION

### 1. Inventions

*For over 30 years, Barry Fox has looked at the world's strange and wonderful patent applications each week, digging out the most exciting and even terrifying new ideas.*

#### **Live rail networking**

Want to watch live TV on the Eurostar? Or surf the web at broadband speed aboard an underground train? The answer, says Anthony Whelan of California, US, is to adapt the electrified rail to deliver data, as well as power, to moving carriages.

Data would be transmitted to a train on a high frequency carrier signal riding on top of the main current - a technique is already used to deliver data to homes over mains power lines.

A filter aboard the train would separate the data signal from the lower frequency power one, and send it to passenger carriages using a wireless network or through sockets in the armrests.

Unlike satellite systems, the technology would work under underground and in tunnels. It should also be subject to less disruption than cellphone communications, the patent suggests.

Repeaters could boost the data signal every kilometre, to help it withstand the interference, and internet error-correction protocols could be used to keep the signal in check.

#### **Used tyre printer ink**

Printer ink can cost as much as vintage champagne, so finding a cheap way to make it would be a godsend. Now three inventors from Derbyshire, UK, think they have just the solution: extract the carbon from unwanted tyres to generate a cheap and plentiful supply.

On the one hand, the black carbon powder currently used in regular ink is refined from pure oil and the liquid used in cartridges is boiled down from a volume six times larger. On the other hand, millions of tyres are dumped every year.

Baking a tyre at 800°C should break it into a mucky mix of fused silica, steel wire, sulphur, and lumps of precious carbon char, the inventors say. Shaking the mixture through a magnetic sieve ought to get rid of lumps and metal, and then re-baking the smaller particles should produce semi-pure carbon powder.

Flushing this through with hydrochloric acid will suck out any remaining metal and sulphur, and caustic alkali should remove any silicon bits, to produce usable carbon powder.

As an added bonus, the inventors claim the whole process will release far less carbon dioxide into the atmosphere than the traditional refinement process.

**Task 1**

Read the text and complete the table with your notes based on the text with no more than 3 words, according to the example (0).

|   | NOTES                  | MARKING BOX |    |
|---|------------------------|-------------|----|
|   |                        | 1.          | 2. |
| Elements of data transfer in 'Live Rail Networking' | 0. <i>main current</i> | ✓           | ✓  |
|   | 1.                     |             |    |
|   | 2.                     |             |    |
|   | 3.                     |             |    |
|   | 4.                     |             |    |
| Process of producing printer ink from old tyres     | 5.                     |             |    |
|   | 6.                     |             |    |
|   | 7.                     |             |    |
|   | 8.                     |             |    |
|   | 9.                     |             |    |
| SCORE   |                        |             |    |

**Task 2**

Read the text again and use it to decide if the statements are true (T) or false (F). Write your answers in the table below according to the example (0). *Please note that if all your answers are marked as true or as false, your answers will be disqualified.*

| STATEMENTS   | TRUE OR FALSE | MARKING BOX |    |
|--|---------------|-------------|----|
|  |               | 1.          | 2. |
| 0. <i>The same way as electricity, data can be carried to trains on the live rails.</i>                | T             | ✓           | ✓  |
| 10. One advantage of this system is that it can be used even in tunnels and underground.               |               |             |    |
| 11. There is no interference to exclude in this system.  |               |             |    |
| 12. To make ink from old tyres is much cheaper than the production method used now.                    |               |             |    |
| 13. There is a disadvantage to the new method of producing ink, namely, high carbon-dioxide emissions. |               |             |    |
| 14. Only mechanical processes are used in the process of gaining clean carbon powder for ink.          |               |             |    |
| 15. Metal particles are extracted with a magnetic sieve.   |               |             |    |
| SCORE  |               |             |    |

## 2. A green mood sweeps Scotland

THOUSANDS of Scots have stepped up to the challenge of fighting climate change and are helping our country set a shining example to the rest of the world.

Six months have passed since The Scotsman and the Scottish Government launched the "Let's Go Green Together" campaign, and the results have been phenomenal.

### 13 ways that Scotland has gone green over the past six months:

1. Nearly 3,000 people have signed up to the Greener Scotland campaign launched by The Scotsman and The Scottish Government.
2. Thousands of people took part in Scottish Biodiversity Week in May, to help celebrate and preserve our natural environment.
3. Selkirk in the Borders announced in April that it was going plastic bag free. Residents were issued with replacement canvas bags
4. St Thomas' Primary School in Keith, Moray became the 600th Scottish school to be awarded the prestigious Green Flag in the Eco-Schools programme for its commitment to the environment.
5. More than £3 million was given by the Scottish Government to two haulage companies-Eddie Stobart and John G Russell- for the provision of two new freight rail services from the central belt to Inverness, to cut 400 lorry journeys a week.
6. Up to £6 million is to be made available to fund projects to treat organic waste, it was announced in April. It is hoped the cash, from The Scottish Government, will help meet targets for 70 per cent of municipal waste to be recycled or composted by 2025.
7. A geothermal heating source has been installed at Glaitness Primary School in Orkney. The 300ft deep borehole supplies all heating to the school.
8. Funding was tripled in March for people who want to install home energy kit such as solar panels and heat pumps on their homes. There is now £13.5 million available over three years.
9. A Former computer programmer has set up a business in Glasgow collecting fat from chip shops and restaurants and converting it to environmentally friendly biodiesel.
10. Eco-friendly paper has been introduced for use of staff by the Scottish Government.
11. Europe's largest onshore wind farm could be about to grow even bigger after plans were announced by ScottishPower Renewables to build a further 36 turbines to add to the 140 already on Whitelee Wind Farm near Glasgow.
12. The first tidal-power-driven electricity in Scotland was connected to the National Grid. OpenHydro's turbine, off the island of Eday in Orkney, is expected to pave the way for a huge tidal-power development next year in the Channel Islands.

**Task**

Read the text again and pair the projects in the table to the given questions, according to the example (0). There are 15 correct answers, excluding the examples.

| QUESTIONS  | THE NUMBER OF<br>THE PROJECT(S)<br>/NEWS ITEM(S) | MARKING BOX |          |
|--|--|-------------|----------|
|  |  | 1.          | 2.       |
| <b>0. Which projects involve schools?</b>  | <b>4, 7</b>                                      | <b>✓</b>    | <b>✓</b> |
| Which projects are connected to geothermal energy use?                                 |  |             |          |
| Which news items are about government funding green causes?                            |  |             |          |
| Which news items show the popularity of the campaign?                                  |  |             |          |
| Which project is about an offshore power station?                                      |  |             |          |
| Which initiatives involve local private businesses?                                    |  |             |          |
| Which news item is about the expansion of an already existing renewable power station? |  |             |          |
| Which project tries to reduce CO2 emission on the roads?                               |  |             |          |
| Which project is aimed specifically at recycling paper?                                |  |             |          |
| <b>SCORE</b>   |  |             |          |

## WRITING SKILLS

### Task 1

Study the table and use the provided information to complete the sentences using 50-80 words, according to the example (0).

**Top 10 Construction Markets in 2009 and 2020**

| Country  | Market Size in 2009 (USD bn) | World Market Share in 2009 | Predicted Top 10 in 2020 |
|----------|------------------------------|----------------------------|--------------------------|
| US       | 1,132                        | 17.4%                      | China                    |
| China    | 1,034                        | 13.7%                      | US                       |
| Japan    | 592                          | 7.9%                       | India                    |
| Germany  | 303                          | 4%                         | Japan                    |
| Spain    | 292                          | 3.9%                       | South Korea              |
| France   | 270                          | 3.6%                       | Germany                  |
| Italy    | 262                          | 3.5%                       | Spain                    |
| S. Korea | 248                          | 3.3%                       | Russia                   |
| India    | 247                          | 3.3%                       | UK                       |
| UK       | 243                          | 3.2%                       | Canada                   |

Source: Global Construction 2020 Report

**0. The table shows the top 10 construction markets in 2009 and the prediction for 2020.**

**1. The market size is .....**

**2. There are two countries which will drop out .....**

**3. Russia and Canada are.....**

**4. All the other countries will change .....**

**5. In 2009, the US had the biggest .....**

**6. By 2020, the US and China will .....**

**7. By 2020, Germany, Japan and Spain .....**

**8. On the other hand, China, South Korea and the UK will .....**

**9. The biggest improvement can be expected from India, who .....**

**10. South Korea will also .....**

**Task 2**

You have bought an amplifier, but you have some problems with the delivery. (Your name and address in this role: Tóth Kornél/ Katalin, sole proprietor, 12 Rose Street, Manchester, MR6 7T2)

Write a letter to the manufacturer, (Celetron System, 15 Bond Street London SW2 NE1), in 120-140 words.

In the letter you should

- complain about:
  - being overcharged
  - late delivery
  - inadequate sound quality
- write about
  - the action you want them to take

**LISTENING COMPREHENSION****Text 1**

Listen to the text about the green habits of Seattle's inhabitants. Based on the text, decide if the statements are true (T) or false (F). Write your answers in the table below, according to the example (0). *Please note that if all your answers are marked as true or as false, your answers will be disqualified.*

| STATEMENTS  | TRUE<br>OR<br>FALSE | MARKING<br>BOX |    |
|---|---------------------|----------------|----|
|   |                     | 1.             | 2. |
| 0. (Example) According to the speaker, in the US people care about their environment. | <i>T</i>            | ✓              | ✓  |
| In Seattle,   |                     |                |    |
| 1. rubbish is collected selectively.  |                     |                |    |
| 2. eco-friendly buildings and services are widely advertised.                         |                     |                |    |
| 3. green roofs are very common.   |                     |                |    |
| 4. there aren't a lot of hybrid cars yet.   |                     |                |    |
| 5. hybrid cars run partly on gasoline and partly on battery.                          |                     |                |    |
| SCORE   |                     |                |    |

**Text 2**

Listen to the text about technical inventions, including a safety belt, and provide short answers of no more than 4 words to the questions. Write your answers in the table below according to the example (0).

|       | QUESTIONS  | ANSWERS                  | MARKING BOX |    |
|-------|--|--------------------------|-------------|----|
|       |  |                          | 1.          | 2. |
| 0.    | <i>(Example) How many lives have been saved by the seatbelt worldwide?</i> | <i>up to one million</i> | ✓           | ✓  |
| 1.    | When did George Cayley invent the seatbelt?                                |                          |             |    |
| 2.    | What else did he design?   |                          |             |    |
| 3.    | What did the USA do against copying the invention?                         |                          |             |    |
| 4.    | How did the safety belt secure the driver?                                 |                          |             |    |
| 5.    | How much time passed before the invention of the current seatbelt?         |                          |             |    |
| 6.    | What nationality was Niels Bohlin?   |                          |             |    |
| 7.    | What was his seatbelt like?  |                          |             |    |
| 8.    | For what industry did he design seats?                                     |                          |             |    |
| 9.    | In what situations did his seat help pilots?                               |                          |             |    |
| 10.   | What industry did he take his knowledge to?                                |                          |             |    |
| SCORE |  |                          |             |    |

## **SPEAKING SKILLS**

### **Task 1: Professional discussion**

### **Task 2:**

#### **Situation 4**

#### **Examiner's copy**

#### **THE EXAMINEE'S ROLE**

You are a Hungarian living in Liverpool. You have just moved into your new house, built by Kelly Construction Ltd.

- Call the contractor to complain about the following:
  - the thermostat is not working properly
  - some windows cannot be closed totally
  - some door handles are broken
- Ask about the use of the sun-collectors you have on the roof
- Agree on a time and date when a repairman will fix the problems

#### **THE EXAMINER'S ROLE**

*You are the contractor of the Kelly Construction Ltd. Your company has just finished building a house for a Hungarian client. S/He is calling you to discuss the following:*

- *ask him whether he is satisfied with his/her new house*
- *ask him/her to detail the problems*
- *tell him/her that you will send a full description about the use of the sun-collectors on the roof*
- *agree on a time and date when a carpenter/repairman visits him/her to fix the problems*



Task 3:

