

**Cambridge International Examinations** Cambridge International General Certificate of Secondary Education

0510/12
lay/June 2018
ur 30 minutes

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in. Write in dark blue or black pen. Do not use staples, paper clips, glue or correction fluid. DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions. Dictionaries are **not** allowed.

At the end of the examination, fasten all your work securely together. The number of marks is given in brackets [] at the end of each question or part question.

This document consists of 13 printed pages and 3 blank pages.



Read the information sheet about foods that are very good for you, and then answer the following questions.

## Superfoods

There are some types of foods, called superfoods, which are particularly good for us. Ones we have known about for a long time include avocados, blueberries and seaweed. But here are four more that you might not have heard of.

First, daikon is a root vegetable that is popular in Japanese and Chinese cookery. People also refer to it as moola, and it is a type of radish. Not only does it have a peppery, fresh taste; it contains incredibly high levels of vitamin C, making it particularly healthy.

Another vegetable superfood is the bitter gourd, or bitter melon. Although its appearance isn't pretty – it resembles an ugly cucumber – it is believed to reduce cholesterol and lower blood sugar levels, so is great news for diabetics.

Two fantastic fruits are gubinge and lucuma. The first is a small green fruit from Australia. The other grows in valleys in Peru, and contains several minerals and vitamins.

## Even greater benefit

Until recently, most scientists have concentrated on studying the effects of individual foods on our health. But in the last few years, what is known as food synergy has become popular. This is the idea that eating certain foods in pairs can make them even healthier for us than if they are eaten alone. Researcher David Jacobs came up with the name, and dietician Elaine Magee has written a book on the topic. She explains: "It is like adding one plus one and getting four instead of two: the total is greater than the sum of the individual parts."

One pair of foods that works well together is salmon and yogurt. The vitamin D from the oily fish helps the body to take in a greater quantity of calcium from the yogurt – and that is good news for your bones.

We all know that vegetables are good for us, but pairing them with certain other foods seems to make them significantly better for us than they would be alone. One such combination is broccoli and tomatoes, which was discovered by scientists at the University of Illinois; another is cauliflower and chicken, which was the focus of a study at The Institute of Food Research. They found that selenium, which is an essential mineral contained in chicken, and sulforaphane, a plant chemical found in cauliflower, work together to provide the winning combination.

So, next time you're wondering what to eat for dinner, maybe this will give you some ideas!

(a)	What is another name for daikon?
(b)	[1] What does the bitter gourd look similar to?
(D)	
(c)	Which country does the fruit called lucuma come from?
(d)	[1] What is the term for combining foods so they work better together, <b>and</b> who invented this term?
	[2]
(e)	What can your body absorb more of when you eat salmon and yogurt together?
(f)	Where did scientists look into the benefits of pairing cauliflower with chicken?
	[1]

[Total: 7]

Read the article about the Global Teacher Prize, and then answer the following questions.

# The Global Teacher Prize

The Global Teacher Prize is a US\$1 million award presented annually to an exceptional teacher who has made an outstanding contribution to their profession.

A few years ago, an educational charity called the Varkey Foundation was concerned that many problems around the world are caused by lack of education. They decided to ask Populus, a leading research company, to find out more, by comparing education in countries around the world. One section was on how teaching compares with other professions. Their investigation also covered many other key topics, such as are children encouraged to become teachers. The results of this survey, published in 2013, shocked the chairman of the Varkey Foundation, whose parents had both been teachers. Therefore, in the same year, he decided to establish the Global Teacher Prize, with the overall intention of raising the profile of the teaching profession. The first prize was awarded in 2015.

The process of choosing a winner is a lengthy one. People can name a teacher they know, or a teacher can apply themselves. In the first year, teachers from 127 different countries were nominated, and over 5000 applications were received. After the closing date, a team of judges carefully select 10 finalists, who gather in Dubai for an exciting event where the award is presented. The winner in the first year was Nancie Atwell, a teacher from the USA, and media interest in her success was enormous. After accepting her prize, Nancie gave a speech in which she talked about the fact that as a teacher you can make a real difference to students' lives.

Nancie discovered a love of books when she was a child, and went on to become an English teacher. Like many other teachers, she enjoys the chance to be creative in the classroom. She developed a technique called the writing-reading workshop, which she first described in her book 'In The Middle'. Her method allows students to choose the subjects they write about and the books they read, and her success is evident in that many of her students have become published authors. Being able to see students make progress is an explanation given by many teachers for their love of teaching.

The winner of the Global Teacher Prize receives US\$1 million. When asked what they would do with this money, various finalists suggested that they could buy teaching equipment for their school, or use it to design an educational website. Nancie donated her award to the Center for Teaching and Learning, the school she set up in 1990 to support less advantaged students. One thing finalists all agree on, however, is that their role as a teacher enables them to share their love of learning.

The 2016 competition was also a great success. The award was presented to a primary school teacher called Hanan Al Hroub. She developed her own specialist teaching approach, which is based on developing trusting and friendly relationships with students, paying attention to their individual needs, and above all, rewarding positive behaviour. She wrote about this in her book 'We Play and Learn', which has inspired other teachers to review the way they teach.

Would you consider going into the teaching profession? After all, no two days are the same, which is what attracts many to teaching in the first place. Perhaps the Global Teacher Prize can inspire more people to try to become the outstanding teachers of the future!

A teacher's average working week		
Registration	1.5 hours	
Teaching classes	25 hours	
Preparing lessons	5 hours	
Marking homework/coursework	9 hours	
Meetings	1.5 hours	
Administration	2.5 hours	
School duty	2 hours	

(a)	Which organisation carried out a survey into education?
(b)	What questions did the education survey include? Give <b>two</b> details.
(c)	
(d)	What is the main aim of the Global Teacher Prize?
(e)	How many teachers were entered for the prize in the first year?
(f)	Where does the prize ceremony take place?
(g)	What is the name of Nancie Atwell's teaching method?
(h)	What did Nancie do with the prize money?
(i)	What does Hanan Al Hroub believe it is most important to focus on when teaching?
(j)	According to the chart, how long does the average teacher spend planning what to teach each week?
	[1]
	[Total: 11]

Georgina Appleton is in Year 10 at Ridgeley High School in Halifax, a town in the north of England. Like her parents, Boris and Tina Appleton, and her brother, Edward, she is very good at maths, and she loves being able to solve problems. In fact, she has just changed her email address to ilovemaths@home.co.uk – it used to be georgie@home.co.uk but she thought that was too boring. She has already decided that she would like to study maths at university.

Three years ago, Georgina heard about a maths competition called the Junior Challenge, but she missed the deadline for applying. However, she was able to enter the Intermediate Challenge the following year, when she was 13. Her brother, who was then 16, entered the Senior Challenge at the same time. They both won medals – she got gold, and he got silver. Her teacher, Mrs Davis, has recently suggested that Georgina could take part in a summer school for talented children, run by The Mathematics Society. It is only possible to get in with a recommendation from a teacher, so Georgina is very excited about this, and has sent off for the application form. Now that Georgina is 15, she is almost old enough to take part in the British Mathematical Olympiad, which is something she would love to be selected for in the future, if she continues to make good progress.

The summer school takes place in Oxford, which is about four hours away by train from Georgina's home, 64 Rowan Drive, Halifax, HX4 7RA. Her aunt lives just outside Oxford, and has said that she can stay with her. However, Georgina has decided she would rather stay at the school so that she can take part in social activities. She is looking forward to meeting other young people who also love numbers and like the fact that maths is completely logical.

The summer school is a week long, and starts on 5, 12 or 19 August. Georgina will be on holiday with her family in the first week of August, and her friend from Germany is coming to stay with her on 20 August for a week; so the middle week suits her best.

Imagine you are Georgina. Fill in the form, using the information above.

The Mathematics Society
Summer school application form
Section A: Personal details
Full name:
Home address:
Current age:
Email address:
School name:
Teacher's full name:
Section B: Mathematics
Which mathematics competitions have you entered previously? (please circle)
Junior Challenge Intermediate Challenge Senior Challenge
How successful were you in this competition?
Which course would you like to attend? (please tick)
August 5–9 August 12–16 August 19–23
Do you require accommodation? (please delete) YES / NO
Section C
In the space below, write <b>one</b> sentence stating why you like mathematics and <b>one</b> sentence about what you would like to do with mathematics in the future.

[Total: 14]

Read the article about WWF (The World Wildlife Fund), and then complete the notes.

## WWF

The World Wildlife Fund, usually called WWF, is the first global green organisation. It was set up by a small group of people in 1961 in Switzerland, and national WWF offices gradually opened across the world after that. The aim of the organisation is to protect the environment and the future of wildlife.

WWF focuses on conducting research to establish the extent of environmental problems. The organisation recently published a report which revealed three worrying findings. It established that wildlife populations worldwide have declined by 52% since 1970. It also showed that humans are using the world's natural resources far too quickly. As a result, our future on this planet is threatened.

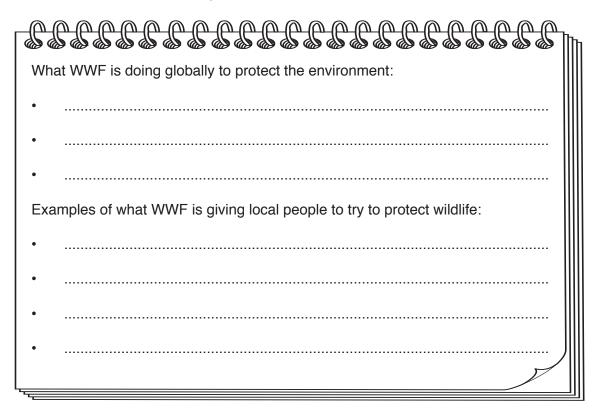
Their extensive research enables WWF to come up with solutions to the environmental problems. One method of dealing with global threats to the environment is by running conservation projects all around the world. As the human population is growing, more land is being used for farming. This has reduced the natural habitat of many wild animals, and as a result wildlife and people are now living closer together, which can cause problems. For example, villagers in parts of India have been cutting down trees to use for fuel, but this destroys the natural habitat of tigers. Therefore, WWF is donating biogas stoves to help people cook and heat their homes without the need to cut down trees. Another endangered animal in parts of east Africa is the mountain gorilla, which looks for food on farmers' land. WWF is providing head torches for mountain rangers, so they can patrol farmland by night, and return mountain gorillas to the safety of the forest. And in Nepal, WWF is supplying fences so that farmers can protect their land and prevent endangered snow leopards from attacking their farm animals.

In addition to these projects, WWF is working with businesses and industries in many countries to encourage them to work in more environmentally friendly ways. WWF also believes strongly in raising awareness through advertising, so that people around the world are better informed and understand the threats to the environment. An example of successful advertising at a local level has been to highlight the dangers faced by turtles which get caught in fishing nets. WWF has been working with fishermen in Tanzania, to help them see the importance of turtle conservation. In the past, if they had to cut a trapped turtle free, their nets could not be used again. So WWF has been replacing fishing nets, which makes it more likely that fishermen will release turtles. Another successful project run by WWF in Africa has focused on reducing potential conflict between humans and elephants. Elephants love to eat crops, so they come on to farmland which puts them and the villagers at risk. WWF has encouraged farmers to set up beehives away from their land, as elephants are even more attracted to honey. WWF provides farmers with bee-keeping equipment so they can manage these hives, and therefore live safely alongside elephants.

WWF also works with young people of all nationalities to inspire them to care about nature, and to help them to make positive choices for their future on this planet. Whether WWF is working at a local or global level, the aim is the same – to protect our planet for future generations.

You are going to give a talk about WWF to your class. Prepare some notes to use as the basis for your talk.

Make short notes under each heading.



[Total: 7]

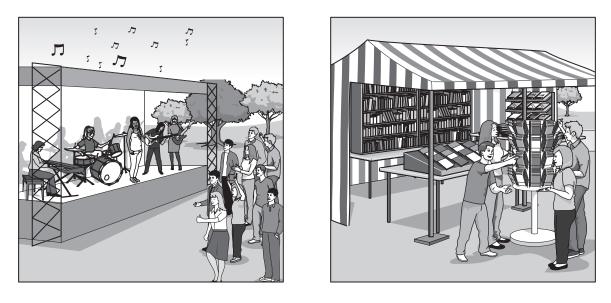
#### Exercise 5

Imagine that you have given your talk to your class. Now your teacher has asked you to follow this up with a summary for the school website.

Look at your notes in Exercise 4. Using the ideas in your notes, write a summary about WWF.

Your summary should be about 70 words long (and no more than 80 words long). You should use your own words as far as possible.

[Total: 5]



When you were on holiday recently, you went to a music festival with your family.

#### Write an email to your friend about the music festival.

In your email, you should:

- describe where the festival took place
- explain what you enjoyed most about the festival
- say what you would like to do for your next holiday.

The pictures above may give you some ideas, and you should try to use some ideas of your own.

#### Your email should be between 100 and 150 words long.

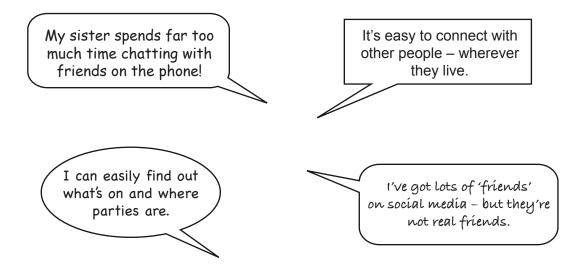
You will receive up to 7 marks for the content of your email, and up to 6 marks for the style and accuracy of your language.

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In your English class, you have had a discussion about the way that using technology can affect your social life.

Here are some comments from students in your class:



#### Write an article for your school magazine, giving your views.

The comments above may give you some ideas, and you should try to use some ideas of your own.

#### Your article should be between 100 and 150 words long.

You will receive up to 7 marks for the content of your article, and up to 6 marks for the style and accuracy of your language.

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