



# Cambridge International AS Level

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ENGLISH GENERAL PAPER

8021/23

Paper 2 Comprehension

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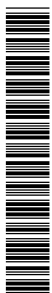
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## INFORMATION

- This insert contains all the resources referred to in the questions.
- You may annotate this insert and use the blank spaces for planning. **Do not write your answers** on the insert.

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This document has **8** pages. Any blank pages are indicated.

## Material for Section A

### Background

Jamil, Nicoletta and Simon, three friends, are about to complete their high school education. They would like to volunteer to work together, unpaid, on a worthwhile project during their last school holidays, before going to university. Below are extracts from the 'working holiday' websites of the two organisations the three friends are considering.

### Option A: Footpath Focus

Nearing completion of a three-year project, we are building a footpath on a heavily eroded section of a national pilgrimage hiking trail. Volunteers will need high levels of fitness for this physically demanding activity. You will be walking three kilometres uphill each morning to the work site – carrying tools! – and constructing a series of stone steps and wooden hand rails, all to encourage the next half-century's visitors to keep to the path. The mountainous region is remote but incredibly beautiful and, on clear nights, the stars are awe-inspiring to witness. Snuggle in a warm sleeping bag round a campfire with your 32 new friends – there's nothing else to do in the evenings, after all! Warning: we work whatever the weather!

Accommodation: Camping, cooking your own food, very basic facilities

Cost: \$150 contribution from each volunteer for food (communal cooking). Free minibus transport from Limbali train station. Bring your own tent, sleeping bag, sturdy footwear etc.

Duration: Two weeks

Day off: Hike the full trail to visit the breath-taking hilltop Mittaru monastery, an internationally recognised site of religious and cultural significance (appropriate dress required, please).

### Option B: Total Tartaruga

Tartaruga – a tropical island and small eco resort, running fully on solar power – is now also the setting for what we hope will become an important two-year scientific study of its endangered turtle population. Demand from would-be volunteers from all over the world will be high – and no wonder! You will be tagging turtles, allowing us to trace their movements and better understand their nesting and feeding behaviours. Some of the 16 people selected will need the skills to record and analyse data on spreadsheets, and to edit film for promotional website materials. Hopefully you can also stay quiet for many hours, observing and filming turtles coming ashore to lay their eggs – a rare privilege indeed.

Accommodation: Four-berth beach cabins, each with shared bathroom

Cost: \$600 per person, covering the boat transfer to the island and accommodation costs, with buffet-style meals included (meat-free menu)

Duration: Four weeks

Days off (three): Snorkelling and swimming from the beach, anyone? Or stroll the island's shoreline, all on white sand – tempted yet?!

### Extract from a conversation between the three friends

Jamil: This trip is going to be very special for the three of us, isn't it? I'm a bit anxious about being part of a large group, though. What if I don't get on with the others? So, for the footpath work, we'd have to get the train to Limbali. Is that expensive?

Nicoletta: No need to worry. I looked up the prices – with student discount, only \$90 return each. That's nothing! Besides, to get to the harbour for the Tartaruga boat departures, we'd have to fly. Cheapest flights I can find are \$380 return each – *far* too much to spend.

Simon: Absolutely. We're volunteer workers, after all! And I'd say we've no chance of getting on that brilliant turtle adventure – it sounds super competitive.

Jamil: But what an experience! I really want to work in animal conservation, eventually. And you're a computer whizz, Simon – you could be really useful to their project.

Simon: Yes, we've all worked hard towards our exams and those beachside cabins sound amazing. I must admit, heavy physical work in all weathers, with only a tent to welcome us at the end of the day... Do they even mention showers? Really?! Great project, but lacking a bit of a fun factor for me.

Nicoletta: How shallow of you! Wouldn't you like seeing all those stars, so far from the light pollution of the city, and visiting the ancient monastery? You've always been interested in spirituality and culture, Simon. And Jamil, you must bring your guitar for sing-songs round the campfire!

### Additional Information

1. Jamil broke his left ankle three months ago. Following physiotherapy, it has healed well, but he is still rather cautious about over-exerting himself.
2. Nicoletta likes the idea of playing a part in something with long-lasting impact and where their efforts have visible results.
3. Simon is a vegetarian and is interested in all aspects of environmental sustainability, especially in travel and tourism.
4. The three friends each own hiking boots and a heavy-duty sleeping bag. Only Nicoletta has a tent, big enough for three, and a full range of other camping equipment.
5. Keen on languages, Simon hopes to study at least two at university.
6. Jamil's family is not very well off, so he needs to earn and save as much money as he can in the holidays, to help pay for university.
7. Some online reviews by recent Total Tartaruga volunteers claimed they spent hours clearing litter from the beaches and were disappointed not to have seen more turtles.
8. Nicoletta has competed at national level in triathlons (races involving swimming, cycling and running), while Simon plays football twice a week with friends in the local park. Jamil loves to relax by watching endless hours of golf on television.

## Material for Section B

### Twenty years of the International Space Station – but was it worth it?

Space scientists are preparing to celebrate the twentieth anniversary of humanity's continuous presence in outer space. First inhabited on 2 November 2000, the International Space Station (ISS) has since provided shelter for a steady rotation of crews, ensuring the station has never been left unoccupied.

A total of 240 men and women have set up camp on the 109-metre-long, 420-tonne station as it has swept over Earth at 17 000 mph, making 16 orbits of our world every day. Tim Peake is the only official British astronaut to make it to the ISS. 'You can see the atmosphere, only 16km thick. It is not endless,' he recalled. 'All of the gas that keeps us alive on Earth is trapped in that tiny, tiny layer. You suddenly realise that what we put into that layer is really important.'

More mundane aspects of station life have included guitar serenades by floating astronauts; culinary history made by Italian astronaut Samantha Cristoforetti, who drank the first espresso made in outer space out of a zero-gravity mug; and dealing with broken toilets. And these domestic details are important, scientists insist. 'Running the International Space Station has shown us that human beings can make their homes away from their own planet, in a truly hostile environment,' said astrobiologist Professor Charles Cockell of Edinburgh University.

Plans to build a permanent orbiting space station were first drawn up in the 1980s by NASA\*. However, forecasts of costs indicated these would be alarmingly high – until the collapse of the Soviet Union\*\* offered an opportunity to cooperate with Russia. Its space engineers had already gained considerable experience of long-term space missions.

'It was also a highly pragmatic move by the United States,' said Professor Anu Ojha, a director of the UK's National Space Centre. 'America wanted to prevent Soviet space experts from getting snapped up by rogue states as the USSR disintegrated. So it sought to get them involved in a joint space programme.'

In the end, the two nations agreed on a plan for the ISS's construction, with Canadian and Japanese space agencies also agreeing to join the project, along with the European Space Agency. Assembly began in 1998 and required more than 30 flights by US space shuttles and 40 by Russian rockets to take components and modules to the station before its completion in 2011. For years, astronauts were preoccupied with construction, and only relatively recently have they been able to concentrate on doing serious science.

The final bill for constructing the ISS came to more than \$100bn. The station soaks up \$4bn a year in maintenance costs and service flights. The question is: was this vast expenditure worth it?

Planetary science expert Professor Ian Crawford of Birkbeck, University of London, believes it was. 'The ISS is a fantastic example of high-profile international cooperation. And learning how to live and work in space will stand us in good stead as we prepare to return to the Moon and possibly send people to Mars.'

Other scientists take a different stance. 'There is no way you could justify the vast sums that have been spent on building the ISS,' said the astronomer royal, Professor Lord Martin Rees. 'For a start, the scientific returns have been modest. We have learned a bit about how the

body reacts to spending long periods in space, and we have grown a few crystals in zero gravity. Really, the station only makes news when its toilets get blocked or an astronaut sings while floating about with a guitar.'

Ojha said that he was also initially very doubtful about the scientific rationale for the ISS but was now convinced it was a major success. 'What we have achieved has been immense. We have learned how to assemble huge structures in space and live for long periods up there while dealing with all sorts of incidents that have arisen.' 45

A key lesson learned from studying ISS astronauts has been about the impacts of prolonged periods of zero gravity on the human body. Scientists have found it can take several years for an astronaut to recover their bone density after a four- or five-month space mission. On the other hand, by using treadmills and weight machines, astronauts can avoid the worst effects of muscle loss. 50

NASA is scheduled to continue funding the ISS for four or five years and then hopes private companies will run it commercially while the agency funds cutting-edge missions to explore and settle on the Moon, and possibly one day take humans to Mars. These projects involve building a smaller space station in orbit round the Moon, as a stopping-off point. 55

But is private enterprise interested in taking over the ISS? A Texas-based company has signed a deal with NASA to build a module where research on novel materials would be carried out. Actor Tom Cruise and director Doug Liman are scheduled to fly to the station next year to shoot scenes for an action adventure film. Lastly, a forthcoming reality TV contest has announced plans to send a winner to the ISS. 60

Whether ventures like these will be enough to provide the billions of dollars needed to run the station remains to be seen. The alternative would be to dismantle the ISS and send its components spiralling down to Earth, destroyed as they burn up in the atmosphere. 65

And that would be a terrible waste, says Cockell. 'It was a hell of an effort to get everyone to agree to the station and then to build it. We would have little chance of building another one in the near future.'

\* the USA's National Aeronautics and Space Administration (NASA), responsible for its space programme

\*\* a transcontinental country that spanned much of Eurasia from 1922 to 1991 that was also known as the Union of Soviet Socialist Republics (USSR)

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