

(a) What is special about Go Ape's Tarzan swings and slides?

..... [1]

(b) Which **two** qualities does a participant need in order to use the course?

..... [1]

(c) How do we know that Go Ape is so highly regarded?

..... [1]

(d) The course is monitored and well hidden. How else is it environmentally friendly?

..... [1]

(e) How is the safety of participants ensured? Give **two** details.

..... [1]

(f) How might the rest of the family enjoy a visit to the forest?

..... [1]

(g) When exactly does Go Ape close?

..... [1]

[Total: 7]

Part 1: Exercise 2

Read the following article about special airline seats, and then answer the questions on the opposite page.

LIFE-SAVING CHAIRS?

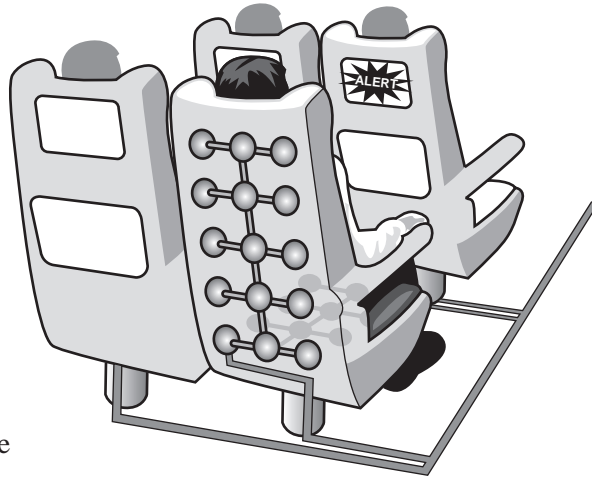
A new generation of 'intelligent' airline seats could save lives by warning passengers that they may be at risk from a potential killer condition, Deep Vein Thrombosis (DVT). This disease is caused by sitting for too long in one position and can cause blood clots in the body (often the legs), which can sometimes cause death.

About 2,000 air passengers every year suffer from DVT, and this may be linked to their journeys by air.

An airline chair has been developed to monitor passengers and let them know when they have been sitting in one position for too long. It is believed that the risk of DVT increases with age as your circulation flow tends to become less effective. Other risks may be smoking or dehydration.

This new 'sensing chair' is fitted with tiny movement sensors, which can be linked to the in-flight entertainment systems in the plane. It can show if a passenger has been sitting still for a long time. It does this by flashing a warning on the screen on the seat in front of the passenger, telling her or him to get up and walk about or stretch.

Lighting in the aeroplane's cabin could also be programmed to respond to the



passengers' movements so that the lighting dims whilst they are asleep and brightens when they wake up. These sensors could also show if a passenger is restless or agitated.

These special chairs may eventually be fitted to all aircraft. The reason for these precautions is because even super-fit athletes can suffer from DVT. A few years ago, three coaches on the British Olympic team suffered from blood clots in their legs on the long flight from Australia to the UK. A group of Australia's top swimmers, on their way to the next Olympics, will be wearing special clothing and equipment to try to prevent DVT. These include wearing face masks, decompression socks and special tights.

(a) What is the probable cause of DVT?

..... [1]

(b) Apart from age, what are the other factors which might lead a person to be more likely to suffer from DVT? Give **two** details.

..... [1]

(c) How can the 'sensing chair' help airline passengers to reduce the risk of DVT?

..... [1]

(d) Why will athletes also be taking these precautions?

..... [1]

(e) Give **one** thing that the Australian swimming team will be doing to keep healthy on their long flight.

..... [1]

[Total: 5]

Part 1: Exercise 3

Read the following article about life on underwater mountains, and then answer the questions on the opposite page.



Undersea lost worlds threatened



A group of marine scientists is becoming increasingly concerned at the threat that deep-water fishing poses to life on deep-sea mountains. Deep-sea mountains are commonly known as 'seamounts', and are fully submerged mountains rising 1,000 or more metres from the ocean floor. They are found throughout the world and are home to many unusual sea creatures. Recent studies suggest that up to 40% of all species found on seamounts are new to science. Some of these sea creatures are living fossils from groups believed to have been extinct since the time of the dinosaurs.

Seamounts support fragile creatures, which live for a very long time but can be harmed by even the slightest disturbance in habitat. Included here are coral communities and species of fish such as the "orange roughy", which can live for over 100 years. Unfortunately, this type of fish, as well as the "deep water red", are sought after and fished far too much by deep-sea fishing boats.

Seamounts have become threatened habitats which support unique communities of sea-life. Seamounts have always been credited with the role of acting as stepping stones for the dispersal of species throughout the world's oceans. Certainly, new species are often discovered in these regions.

The Pacific Ocean is home to most seamounts because of the high level of volcanic activity in the area. This is not the case in the Atlantic Ocean, which has a quantity of its own seamounts yet to be researched.

Species which live on seamounts survive on food carried by currents. Nutrient-rich water is pushed upwards by the seamount, picking up speed as it races over the summit. Sea creatures which live near the summit of a seamount, such as corals and sponges, filter organic matter from this water as it passes. Orange roughy, for example, feed on prawns, shrimps, squid and other small fish that drift by. Also, lobsters and sea spiders live among the coral outcrops. Whales and tuna fish also visit these undersea mountains on their migratory routes.

Scientists warn that many species of sea creature may become extinct before being even identified if relentless deep-sea fishing continues.



(a) Where is the base of a deep-sea mountain?

..... [1]

(b) What is surprising about the proportion of species discovered on seamounts?

..... [1]

(c) Why are the living fossils found on seamounts historically interesting?

..... [1]

(d) How are the seamount fish being threatened?

..... [1]

(e) Why are there fewer seamounts found in the Atlantic Ocean?

..... [1]

(f) Why are scientists so worried about the future of life on the seamounts?


..... [1]

[Total: 6]

Part 2


Part 2: Exercise 1

Read the following information about the world's largest balloon, and then answer the questions on the opposite page.



QinetiQ 1

MISSION POSSIBLE?



QinetiQ 1

Last year, two pilots were hoping to make an attempt to reach a record-breaking altitude of 132,000 feet (height above the earth). They were using the world's biggest balloon called the QinetiQ 1. They aimed to break the 40-year-old world altitude record.

However, they were unable to make their attempt that year because the winds at 66,000 feet were too strong and would have pushed the QinetiQ 1 balloon too far west into the Atlantic Ocean.

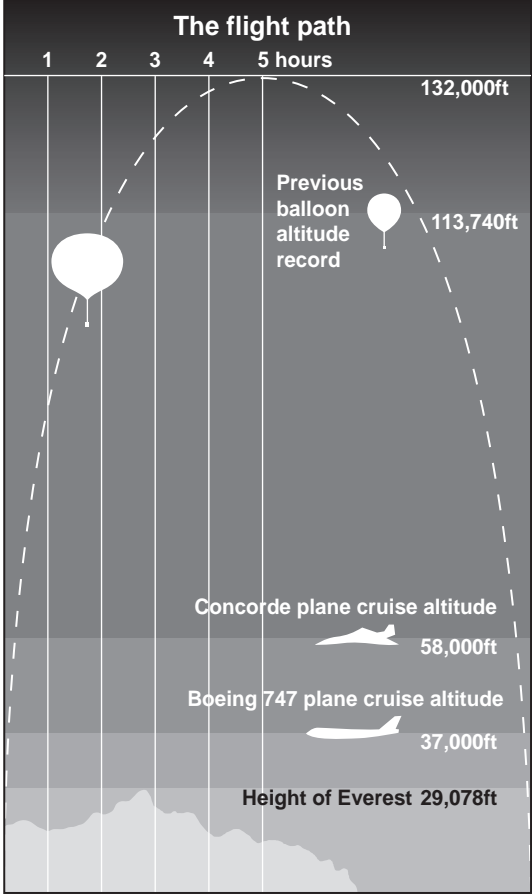
Next summer, when the weather conditions are right, a 72-hour countdown will begin, and the balloon will set off from the southernmost part of the UK to the edge of space. The flight will last about 12 hours. The team and pilots will start to fill the balloon with helium, which will enable it to reach its expected height. They will start at 5am and then launch the balloon from the sea two hours later. The balloon will then rapidly climb to 82,500 feet; the ascent will then be more gradual.

From around 600 miles, people on the earth below will be able to see the enormous balloon rising up into the sky. This means that the whole of the UK and much of France will be able to view the flight with the naked eye.

Once the pilots reach their hoped-for altitude of 132,000 feet, they will let off some flares to celebrate, carry out some experiments and collect more information about this area of the stratosphere. After one or two hours, they will begin their descent back to earth, which should take them about three to four hours before they splash down in the Atlantic.

Temperatures
 will drop to: -70°C at 40,000 feet
 and rise to: -25°C at 132,000 feet

The pilots have to train very hard to enable them to take part in this daring attempt, including a rigorous fitness programme and a course in repairing their pressurised suits. They have to perfect and practise emergency procedures inside the balloon itself. One of these is an 'avoidance action' to prevent accidents or collisions. Another task is to try and deflate the balloon over the sea. The pilots have been successful at their 'mock' emergency attempt and feel confident that their flight will be safe, successful and free of serious problems. Now there is just the wait for favourable weather conditions.



The flight path

1 2 3 4 5 hours

132,000ft

Previous balloon altitude record 113,740ft

Concorde plane cruise altitude 58,000ft

Boeing 747 plane cruise altitude 37,000ft

Height of Everest 29,078ft

(a) Why did the two pilots want to reach a height of 132,000 feet?

..... [1]

(b) Why was it not possible to start their journey last year?

..... [1]

(c) Why will the launch begin two hours after 5am?

..... [1]

(d) How will the pilots celebrate when they finally reach 132,000 feet?

..... [1]

(e) According to the chart, what is the highest an aeroplane has reached in flight?

..... [1]

(f) What will happen to the temperature when the balloon reaches 132,000 feet?

..... [1]

(g) Write a short paragraph (about 60 words) describing **four** ways that the pilots train for this attempt.

.....
.....
.....
.....
.....
.....
.....
..... [4]

[Total 10]

Part 2: Exercise 2

Read the following article about the jaguar, and then write a summary about why the jaguar needed help and how the species has been preserved in Belize.

Your summary should be about 100 words.

You should use your own words as far as possible.

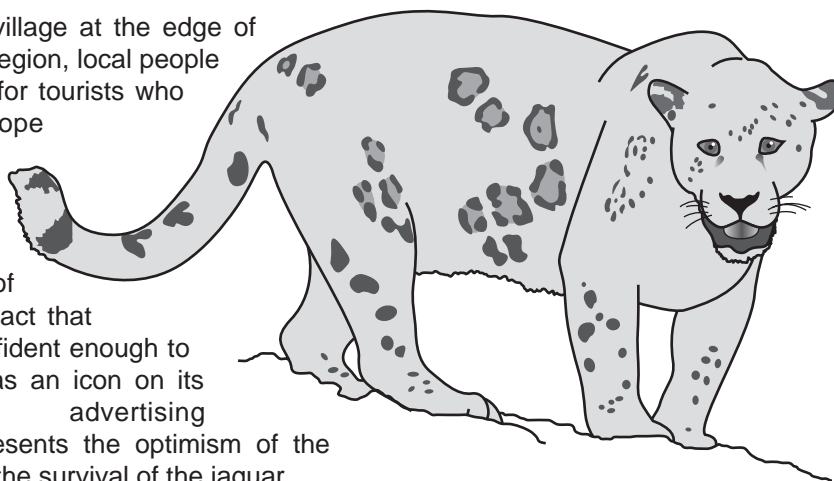
BIG CAT RESCUE

Belize is Central America's tiniest country. Its rainforest on the Yucatan Peninsula was once rapidly disappearing due to human interference. Here live some of the most beautiful and most deadly flora and fauna of the world. This area is known locally as Cockscomb because of a tuft of vegetation clinging to the 1,200-metre-high Victoria Peak. It is the world's most densely populated home of the jaguar, the largest cat in the Americas. The chances of seeing a jaguar are rare, as it is nocturnal. It is not aggressive unless provoked, although local farmers don't believe that – jaguars often eat their pigs and goats on night attacks.

Historically, the jaguar has been threatened with extinction. Around the beginning of the 20th century, jaguars moved through Central America to the northern provinces of Argentina. Within 50 years, however, the jaguars' range was limited to two areas as a result of hunting – Central America and parts of the Brazilian Amazon Basin. Indeed, in 1990, the World Wildlife Fund predicted that the jaguar would become extinct by the year 2000.

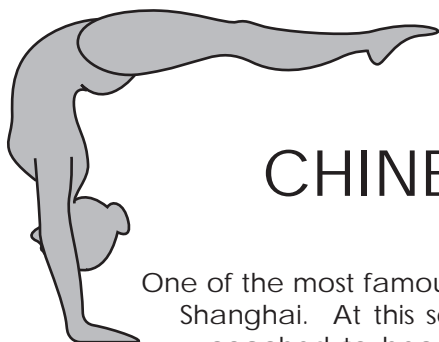
Thanks to Melanie Watts, the species is still thriving in Cockscomb. Melanie dreamed of setting up a jaguar reserve with the aim of securing a future for the jaguar. At first, she needed to gain publicity and sponsors for the project, so Cockscomb Forest Wildlife Sanctuary was eventually formed. Then Melanie set about raising money by participating in a local bicycle race, which won her interviews and publicity for the jaguar reserve. Then she approached Jaguar cars – an obvious link – who generously funded her project. The jaguar population was tracked for protection with infra-red night cameras, and gradually the number of jaguars increased – from about 30 in 1984 to about 75 today. This is good news, but the work of the jaguar sanctuary has to continue or the jaguar will once again become endangered; its existence still remains fragile.

Nowadays in a village at the edge of the Cockscomb region, local people make souvenirs for tourists who visit in the hope of seeing a jaguar. This large cat has now become the symbol of Belize, and the fact that the nation is confident enough to use the jaguar as an icon on its tourism and advertising information represents the optimism of the nation's belief in the survival of the jaguar.



Part 2: Exercise 3

Read the following article about young gymnasts, and then complete the notes on the opposite page.



CHINESE CHAMPIONS

One of the most famous gymnastics schools in China is a school in Xuhui in Shanghai. At this school, very young children are identified and then coached to become champions. The children start this process as young as four years old, and their trainer is responsible for making sure that those chosen are the best.

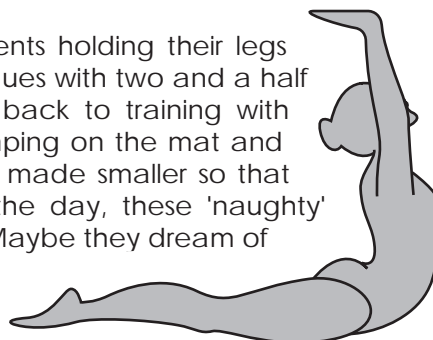
Each year, a team of coaches selects 150 four-year-olds from all the nursery schools in the city of Shanghai. They do not usually pick the child who jumps the highest or is the fastest runner. They prefer to ask the parents, 'Is your son a little devil, does he misbehave?' Many parents hurry to point out how well behaved their child is, ruining their chances of being picked. This is because the coaches are looking for disobedient children as those are the ones with the extra energy to offer. The school of sport in Shanghai is therefore full of 'naughty and disobedient' children!

In addition to this energy, the coaches are also looking for particular physical characteristics. Gymnasts need to be short, slim children with straight arms and small joints. They all need to be tough.

The first group of pre-selected children have to go through half an hour of really hard physical tests to find out if they have the endurance they will need for training in the future. At this point, many parents take their children home, but those who stay have the chance to become champions.

The key to success is hard training sessions, discipline and absolute dedication from childhood. Since the 1950s, China has produced champions and taken the lead in sports for which they were, in the past, never prepared. Although the school in Shanghai is mainly for gymnasts, other stars and champions have been created there in the fields of table tennis and basketball.

The training day starts for the gymnasts with students holding their legs and arms open for 30 seconds. The morning continues with two and a half hours of harder exercise. After eating, they go back to training with hundreds of repeated exercises on apparatus, jumping on the mat and acrobatic stretching. All the apparatus has been made smaller so that the children can train properly. At the end of the day, these 'naughty' children just want to go to bed quietly and sleep. Maybe they dream of the medals they will win when they are older.



YOUNG GYMNASTS

(a) Selection procedure:

- When:
- Who:

(b) Three physical requirements for gymnasts:

-
-
-

(c) Three details of training programme:

-
-
-

[Total: 8]

Part 3: Exercise 1



You and your class have been asked to organise a summer playgroup for young children in your local area.

Write a letter to parents and tell them what kind of things you plan to provide.

Your letter should be about 150 words long.

Your letter should include:

- where you plan to run the group
- what activities you intend to provide
- how the children and the activities will be supervised.

Part 3: Exercise 2

Your class recently took part in a one-day activity to raise money for a charity or other good cause.

Write an article for your local newspaper about your day.

In your article you should say:

- exactly what you did to raise the money
- what was enjoyable (or not enjoyable) about the day, and how much money you raised
- what the money was used for.

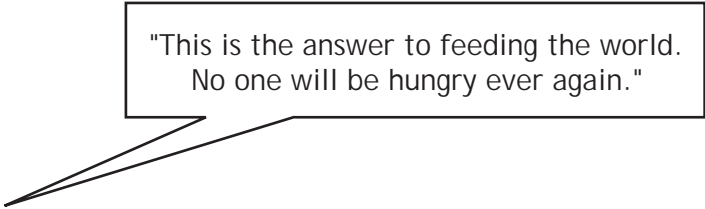
Your article should be about 200 words long.

Part 3: Exercise 3

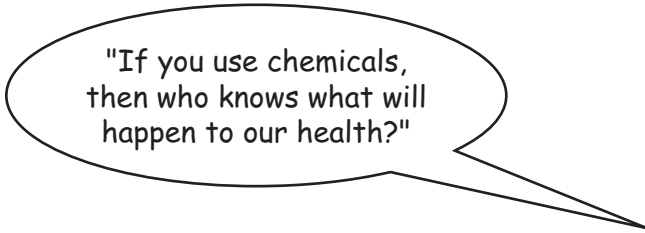
'Scientists have made the production of food easier and cheaper, by using chemicals and other artificial procedures.'

Write an article for your school magazine, stating *your* opinion about this statement.

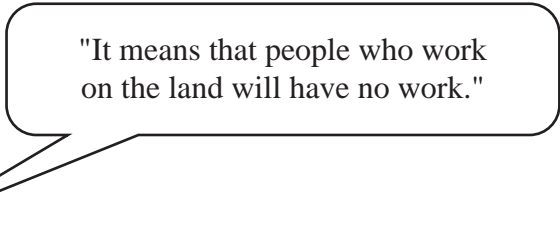
The comments below may give you some ideas, but you are free to use any ideas of your own.




"This is the answer to feeding the world.
No one will be hungry ever again."



"If you use chemicals,
then who knows what will
happen to our health?"



"It means that people who work
on the land will have no work."



"It's a really cheap way to grow
good-quality food."

Your article should be about 200 words long.

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