

Reading Passage 1

Understanding hares

With its wild stare, swift speed and secretive nature, the UK's brown hare is the rabbit's mysterious cousin. Even in these days of agricultural intensification, the hare is still to be seen in open countryside, but its numbers are falling.

A. Like many herbivores, brown hares spend a relatively large amount of their time feeding. They prefer to do this in the dark, but when nights are short, their activities do spill into daylight hours. Wherever they live, hares appear to have a fondness for fields with a variety of vegetation, for example, short as well as longer clumps of grasses. Studies have demonstrated that they benefit from uncultivated land and other unploughed areas on farms, such as field margins. Therefore, if farmers provided patches of woodland in areas of pasture as well as assorted crops in arable areas, there would be year-round shelter and food, and this could be the key to turning round the current decline in hare populations.

B. Brown hares have a number of physical adaptations that enable them to survive in open countryside. They have exceptionally large ears that move independently, so that a range of sounds can be pinpointed accurately. Positioned high up on their heads, the hares' large golden eyes give them 360° vision, making it hard to take a hare by surprise. Compared to mammals of a similar size, hares have a greatly enlarged heart and a higher volume of blood in their bodies, and this allows for superior speed and stamina. In addition, their legs are longer than those of a rabbit, enabling hares to run more like a dog and reach speeds of up to 70 kph.

C. Brown hares have unusual lifestyles for their large size, breeding from a young age and producing many leverets (babies). There are about three litters of up to four leverets every year. Both males and females are able to breed at about seven months old, but they have to be quick because they seldom live for

more than two years. The breeding season runs from January to October, and by late February most females are pregnant or giving birth to their first litter of the year. So it seems strange, therefore, that it is in March, when the breeding season is already underway, that hares seemingly go mad: boxing, dancing, running and fighting. This has given rise to the age-old reference to 'mad March hares'. In fact, boxing occurs throughout the breeding season, but people tend to see this behaviour more often in March. This is because in the succeeding months, dusk – the time when hares are most active – is later, when fewer people are about. Crops and vegetation are also taller, hiding the hares from view. Though it is often thought that they are males fighting over females, boxing hares are usually females fighting off males. Hares are mostly solitary, but a female fights off a series of males until she is ready to mate. This occurs several times through the breeding season because, as soon as the female has given birth, she will be ready to mate again.

D. But how can females manage to do this while simultaneously feeding themselves and rearing their young? The reason is that hares have evolved such self-sufficient young. Unlike baby rabbits, leverets are born furry and mobile. They weigh about 100 g at birth and are immediately left to their own devices by their mothers. A few days later, the members of the litter creep away to create their own individual resting places, known as 'forms'. Incredibly, their mother visits them only once every 24 hours and, even then, she only suckles them for a maximum of five minutes each. This lack of family contact may seem harsh to us, but it is a strategy that draws less attention from predators. At the tender age of two weeks, leverets start to feed themselves, while still drinking their mother's milk. They grow swiftly and are fully weaned at four weeks, reaching adult weight at about six months.

E. Research has shown that hares' milk is extremely rich and fatty, so a little goes a long way. In order to produce such nutritious milk, females need a high-quality, high-calorie diet. Hares are selective feeders at the best of times: unlike many herbivores, they can't sit around waiting to digest low-quality food – they need high-energy herbs and other leaves in order to sprint. This causes them problems when faced with the smallest alterations in food availability and abundance. So, as well as reductions in the diversity of farmland habitat, the decline in the range of food plants is injurious to hares.

F. The rapid turnaround in the breeding cycle suggests that hares should, in principle, be able to increase their populations quickly to exploit new habitats. They certainly used to: studies show that hares evolved on the open plains and spread rapidly westward from the Black Sea after the last ice age (though they were probably introduced to Britain as a species to be hunted for the pot by the Romans). But today's hares are thwarted by the lack of rich farmland habitat. When the delicate herbs and other plants they rely on are ploughed up or poisoned by herbicides, these wonderful, agile runners disappear too, taking with them some of the wildness from our lives.

Questions 34-36

Choose the correct letter, **A B, C** or **D**.

Write the correct letter in boxes 34-36 on your answer sheet.

34. According to the writer, what is the ideal habitat for hares?

- A open grassland which they can run across**
- B densely wooded areas to breed in**
- C areas which include a range of vegetation**
- D land that has been farmed intensively for years**

35. When leverets are living alone they are not visited often by their mother because

- A this helps to protect them from being eaten by other animals.**
- B the 'forms' are so far apart.**
- C they are very energetic from a surprisingly early age.**
- D they know how to find their own food from birth.**

36. What does the writer suggest about the adult hares' diet?

- A They need some plants with a high fat content.**
- B They need time to digest the plants that they eat.**
- C It is difficult for them to adapt to changes in vegetation.**
- D It is vital for them to have a supply of one particular herb.**

Passage 2

Efforts to save a special bird — the spoon-billed sandpiper

Last year an international team of ornithologists devised a bold plan to rescue one of the world's rarest birds. Gerrit Vyn reports

A. At first glance, the spoon-billed sandpiper resembles other small migratory birds of the sandpiper family that breed across the Arctic. But it is the only one to have developed a flattened bill that flares out into a 'spoon' at the end, and that makes it special. If it becomes extinct, thousands of years of evolution will come to an end, which would be a real tragedy.

The bird's Russian name, kulik-lopaten, means 'shovel beak', which is an apt description of a remarkable structure. The bill is 19 mm long and 10 mm wide near the tip and the edges are lined with sharp serrations, called papillae.

Theories have varied as to how the bill functions; one suggestion is that the sandpiper sweeps it through the water in a similar fashion to its larger namesake, the spoonbill. But Nigel Clark, a leading authority on the sandpiper, says the comparison is misleading.

B. Until a few years ago, the spoon-billed sandpiper had never been fully documented, which added to its fascination. But an air of mystery is not helpful if you're a Critically Endangered species. So the organisation 'Birds Russia' decided to produce a photographic and audio record of this imperilled bird with the help of experts round the world. In May of last year, I joined the international expedition to one of the species' last breeding strongholds in North-East Russia. The primary aim of the two-and-a-half month expedition, however, was to collect eggs from wild sandpipers; those eggs would then be hatched in captivity nearby. Later, the chicks would be flown to the Wildfowl and Wetlands Trust (WWT) headquarters at Slimbridge in the UK, in order to

establish a small, self-sustaining population there. These birds would provide a 'safety net', an insurance policy against the wild birds dying out.

C. You might wonder why birds like the spoon-billed sandpiper travel such great distances, about 8,000 km in total, from their wintering grounds on the tropical coasts of Bangladesh, Burma and Vietnam in South-East Asia to breed on the low land, commonly called tundra, in North-East Russia, but from the birds' point of view it is worth it. Though they often arrive to find hostile, wintry weather while they are finding their mates and making their nests, there are relatively few predators there, and the abundance of insects that emerge during the brief but intense Arctic summer creates ideal conditions for raising their chicks.

D. Two main factors are responsible for the sandpiper's recent rapid decline: the ongoing destruction of stopover habitat on its migration route and hunting on its wintering grounds. The development of new industrial cities is destroying former tidal areas, where sandpipers and other migratory birds used to rest and refuel. Subsistence hunting is certainly a hazard in some Asian countries, where hunters trap birds for food. Conservationists are targeting this problem with small-scale interventions. For example, hunters from 40 villages have been given alternative sources of income, such as cool boxes in which they can take fish to sell at markets, in return for a halt to the bird-netting.

E. Once the expedition team had reached its destination, it was seven days before we spotted the first sandpiper. In the following days, more began to arrive and the males' song was heard, advertising their patches of territory to potential mates.

As the sandpipers paired up, the song gave way to the quiet of egg-laying and incubation. In total nine nests were found. The first one was lost to a predator, along with the female attending it. This was a stark reminder of the

vulnerability of a tiny population to natural events, such as storms or predation.

The team then selected donor nests and transferred the eggs to specially prepared incubators. They collected 20 eggs in all, taking entire clutches each time – it was early in the breeding season, so the females were likely to lay replacements. Then 50 days after our arrival, the moment arrived: I witnessed my first wild spoon-billed sandpipers hatch. I had been lying inside a wind-battered hide for 36 hours when I saw the first tiny chicks emerge from the eggs. Having hidden a microphone near the nest, I could also just hear their first calls. Later, I watched them stumbling through the 15 cm-high jungle of grasses on comically oversized legs and feet. But my joy was tempered by concern. Difficulties on their migration route and in their wintering areas meant that other tiny creatures like these faced immense dangers.

F. The complex rescue plan does give some grounds for hope. Young chicks were flown to WWT Slimbridge last year and again this summer. A high-tech biosecure unit has been built for them there, it is divided in two, with the older birds in one section and this year's chicks in the other. To minimise the risk of infections, staff change into full-body overalls and rubber shoes and wash their hands before entering. Hygiene is crucial: even a single strand of human hair could harm the chicks by becoming twisted round their legs or bills. The rescue plan's final stage, once the captive flock has built up sufficiently, will be to fly eggs back to Russia, to release the chicks there. It's a gamble, but when the survival of a species this special is at stake, you have to try.

Questions 34-37

Choose the correct letter, **A**, **B**, **C** or **D**.

Write the correct letter in boxes **34-37** on your answer sheet.

34. What was the main purpose of the international expedition?

- A** to add sandpiper eggs to an international frozen egg bank
- B** to maintain a small group of sandpipers for future generations
- C** to make an audiovisual record of the Russian sandpiper colony

- D to protect a colony of wild sandpipers through a breeding season
35. What do we learn about the drop in the sandpiper population?
- A The birds are increasingly being hunted on their way north to Russia.
 - B Scientists are managing to reduce deaths from netting considerably.
 - C Efforts are being made to protect some of their coastal habitat sites.
 - D Economic growth is one of the underlying causes of the decline.
36. Which feeling did the writer express when the sandpiper chicks hatched?
- A relief that his long wait was over
 - B surprise at the sound of their song
 - C worry about birds of the same species
 - D amazement that they could walk so soon
37. The writer describes the sandpipers' unit at WWT Slimbridge to emphasise
- A how much care is being devoted to their welfare.
 - B how much money is being spent on the project.
 - C his surprise at how fragile the young birds are.
 - D his confidence in the technology available.

Passage 3

The Zebras' long walk across Africa

James Gifford investigates some interesting new research into migration patterns of zebras living in Botswana in southern Africa.

A.

For any animal to travel over 270 km in Botswana partly across the sand and low bush terrain of the Kalahari Desert is a remarkable achievement. But to do so in 11 days and without any obvious motivation, as this zebra population does, is quite extraordinary. On average their journey involves an exhausting round-trip of 588 km – between the Makgadikgadi salt pan area and the

Okavango river – making it second only to the great trek undertaken by the zebra herds in the Serengeti National Park. However, what is even more incredible still in my view is that until recently it was completely unheard of.

B.

Hattie Bartlam, a researcher, discovered this migration while she was tracking zebra groups, officially known as harems, by the Okavango River for her PhD. Each harem consists of a stallion and his seven or eight mares with juvenile foals. There is no loyalty between zebras beyond this social group, though harems often gather together into so-called herds. For her study, Hattie had planned to compare the small-scale movement patterns of 11 different zebra herds in the area.

C.

In December, when the annual rains had transformed the roads into rivers, Hattie was, therefore, more than a little surprised when she checked the data sent by the radio collars she fits to the zebras she is tracking to find that six of the harems were 270 km away on the edge of the Makgadikgadi, a huge mineral-rich area where salt has collected over the years as water evaporates in the heat. Then, when the last of the moisture from the rains had disappeared in May the following year, five of those harems came wearily back to the Okavango. This raised the question: why, despite a plentiful supply of food and water, were the zebras being drawn eastwards to the salt pans? Even more difficult to understand was what made six of the groups travel so far, while the other five remained by the Okavango.

D.

This discovery created quite a buzz in the research community. I decided to visit Hattie and she explained that a century ago the large number of Botswana's zebra and wildebeest herds and the resulting competition for grass made migration essential. One of the migration tracks went from the Okavango to

Makgadikgadi. But in the late 1960s, giant fences were put up to stop foot and mouth and other diseases spreading between wildlife and domestic cattle. One of these went across the migration track. Though the animals could get round the obstacle, each leg of their journey would now be 200 km longer – an impossible distance given the lack of permanent water on the extended route. Even today, with the fence gone (it was taken down in 2004), there is dangerously little drinking water to support the zebras on the return journey to the Okavango.

E.

As a zebra can live up to 20 years, the migration must have skipped at least one generation during the 40 or so years that the fences were up. This prompts another question: it has always been assumed that the young of social herbivores like zebras learn migratory behaviour from their parents, so how did the latest generation learn when and where to go? Not from their parents, who were prevented from migrating. Did they follow another species, such as elephants? We may never know.

F.

Hattie's data points to the conclusion that there are several zebra populations adopting different behaviour. The first, like the vast majority of the Okavango zebras, take it easy, spending the entire year by the river. The second group, 15,000-20,000 strong, work a bit harder. They divide their time between the Makgadikgadi salt pans and the Boteti River, which is reasonably nearby. They sometimes struggle to find water in the Boteti area during the dry season, often moving 30 km in search of fresh grazing. Their reward: the juicy grass around the Makgadikgadi after the rains. The final group of zebras, whose numbers are more modest (though as yet unknown), must surely be considered as among the animal kingdom's most remarkable athletes. By moving between the Okavango and the salt pans, they enjoy the best of both worlds. But the price they pay is an extraordinary journey across Botswana.

G.

Endangered species naturally tend to grab the headlines, so it's refreshing for a relatively abundant animal like the zebra to be the centre of attention for once. Zebras are a vital part of the food chain: understanding their migration, in turn, helps us to interpret the movements of their predators, and Hattie's research has shed light on the impact of fences on migratory animals. So what triggered her interest in zebras? She explains that it is easier to get funding to study exciting animals like lions. Crucial as that undoubtedly is, she believes that herbivores like zebras are key to understanding any ecosystem. The scientific community is fortunate that people like Hattie are willing to take the hard option.

Questions 38-40

Choose the correct letter, **A, B, C** or **D**.

Write the correct letter in boxes **38-40** on your answer sheet.

38. How did Hattie feel when she heard some of the zebras had travelled so far?

- A. annoyed because she would have to follow them to Makgadikgadi**
- B. disappointed that not all of them made it back to Okavango**
- C. frustrated as the rains had made the roads unusable**
- D. unsure as to their real motivation for going**

39. When describing the different Botswana zebra populations, the writer indicates

- A. his admiration for the ones who migrate the furthest distance.**
- B. his sympathy for the ones who stay by the Okavango River.**
- C. his disbelief that those by the Boteti have difficulty finding food.**
- D. his anxiety that their migration patterns may not be able to continue.**

40. What does the writer suggest in the final paragraph?

- A. Too much time has been wasted on research into the predators like lions.**
- B. it is sometimes necessary to go against the trend in research matters.**
- C. Research will result in a ban on fences in areas where zebras live.**
- D. Research into animals which are not endangered will increase.**

Listening

PART 4

Questions 31-40

Complete the notes below.

Write **ONE WORD ONLY** for each answer.

Space Traffic Management

A Space Traffic Management system

- is a concept similar to Air Traffic Control, but for satellites rather than planes.
- would aim to set up legal and 31..... ways of improving safety.
- does not actually exist at present.

Problems in developing effective Space Traffic Management

- Satellites are now quite 32..... and therefore more widespread (e.g. there are constellations made up of 33..... of satellites).
- At present, satellites are not required to transmit information to help with their 34..... .
- There are few systems for 35..... satellites.
- Small pieces of debris may be difficult to identify.
- Operators may be unwilling to share details of satellites used for 36..... or commercial reasons.
- It may be hard to collect details of the object's 37..... at a given time.
- Scientists can only make a 38..... about where the satellite will go.

Solutions

- Common standards should be agreed on for the presentation of information.
- The information should be combined in one 39..... .
- A coordinated system must be designed to create 40..... in its users.

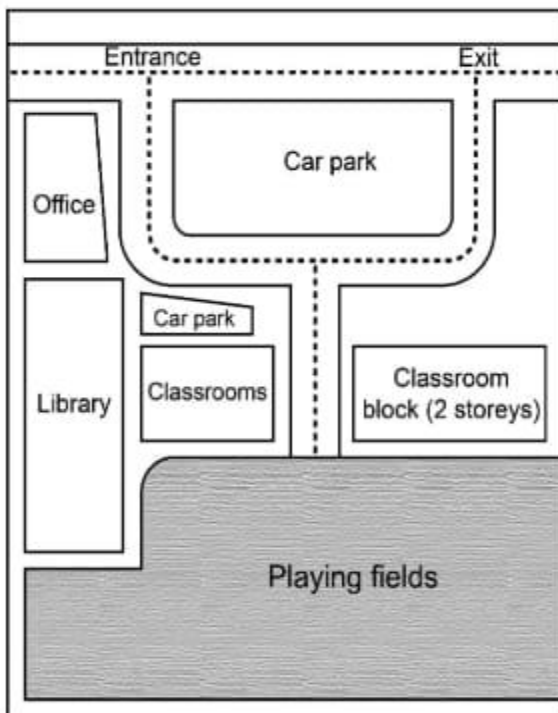
Writing

Task – 1

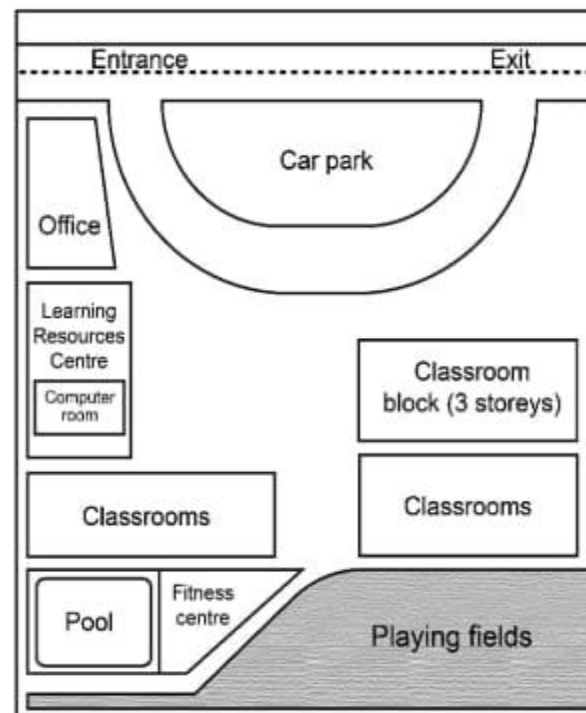
You should spend about 20 minutes on this task.

The maps below show the changes of a school from 1985 to present time.

You should write at least 150 words.



School in 1985
(School population: 1500 students)



School now
(School population: 2300 students)

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IELTS Listening and Reading Answer Sheet

Centre number:

Pencil must be used to complete this sheet.

Please write your **full name** in CAPITAL letters on the line below:

Then write your six digit Candidate number in the boxes and shade the number in the grid on the right.



▶	0	1	2	3	4	5	6	7	8	9
▶	0	1	2	3	4	5	6	7	8	9
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Test date (shade ONE box for the day, ONE box for the month and ONE box for the year):

Day: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Month: 01 02 03 04 05 06 07 08 09 10 11 12 **Year** (last 2 digits): 09 10 11 12 13 14 15 16 17 18

Listening		Listening		Listening		Listening		Listening		Listening	
		Marker use only				Marker use only				Marker use only	
1		✓	1	x	21		✓	21	x		
2		✓	2	x	22		✓	22	x		
3		✓	3	x	23		✓	23	x		
4		✓	4	x	24		✓	24	x		
5		✓	5	x	25		✓	25	x		
6		✓	6	x	26		✓	26	x		
7		✓	7	x	27		✓	27	x		
8		✓	8	x	28		✓	28	x		
9		✓	9	x	29		✓	29	x		
10		✓	10	x	30		✓	30	x		
11		✓	11	x	31		✓	31	x		
12		✓	12	x	32		✓	32	x		
13		✓	13	x	33		✓	33	x		
14		✓	14	x	34		✓	34	x		
15		✓	15	x	35		✓	35	x		
16		✓	16	x	36		✓	36	x		
17		✓	17	x	37		✓	37	x		
18		✓	18	x	38		✓	38	x		
19		✓	19	x	39		✓	39	x		
20		✓	20	x	40		✓	40	x		

Marker 2 Initials

Marker 1 Initials

Band Score

Listening Total

Please write your **full name** in CAPITAL letters on the line below:

Please write your Candidate number on the line below:

Please write your three digit language code in the boxes and shade the numbers in the grid on the right.



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Are you: Female? Male?

Reading Reading Reading Reading Reading Reading

Module taken (shade one box): Academic General Training

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16	✓ 16 x <input type="checkbox"/> <input type="checkbox"/>	36	✓ 36 x <input type="checkbox"/> <input type="checkbox"/>
17	✓ 17 x <input type="checkbox"/> <input type="checkbox"/>	37	✓ 37 x <input type="checkbox"/> <input type="checkbox"/>
18	✓ 18 x <input type="checkbox"/> <input type="checkbox"/>	38	✓ 38 x <input type="checkbox"/> <input type="checkbox"/>
19	✓ 19 x <input type="checkbox"/> <input type="checkbox"/>	39	✓ 39 x <input type="checkbox"/> <input type="checkbox"/>
20	✓ 20 x <input type="checkbox"/> <input type="checkbox"/>	40	✓ 40 x <input type="checkbox"/> <input type="checkbox"/>

Marker 2 Initials

Marker 1 Initials

Band Score

Reading Total

