

TEST MODULE 2

PASSAGE 1

Meet the hedgehog

A

In Norwich, England, the first housing development designed for both hedgehogs and people has been built. All through the gardens and fences is a network of pathways and holes installed just for the ancient, spiny creatures. It's a paradise that Fay Vass, chief executive of the British Hedgehog Preservation Society, calls absolutely fantastic. As for the developers, they have reason to think the animals will help make home sales fantastic, too. Part of the attraction is that many people simply love hedgehogs, particularly in Britain, where children's book writer Beatrix Potter introduced Mrs. Tiggy-Winkle, a hedgehog character, over a century ago. But part of the attraction is also rooted in science. Studies have helped make clear that hedgehogs are good for gardens, eating vast numbers of slugs and other pests as they forage in the vegetation at night.

B

Recent scientific studies about hedgehogs have helped explain mysteries as varied as why hedgehogs apply saliva to their entire bodies, how they have survived on the planet for 30 million years, why they chew toxic toad skins and what secrets they may hold about evolution. As one of the most primitive mammals on the planet, the hedgehog has been helping geneticists understand evolutionary relationships among mammals and even uncover secrets of the human genome. At Duke University, for example, scientists chose the hedgehog and 14 other species to study the lineages of mammals. They determined among other things that marsupials (e.g. kangaroos) are not related to monotremes (the egg-laying platypus and echidna), which had long been a subject of debate. Such questions are not just academic. 'If you are trying to trace, for example, the evolutionary steps of foetal heart development to better understand how foetal defects occur, it helps to know which mammals are related so that you can make accurate inferences about one mammal from another mammal's development, says researcher Keith Killian.

C

Still, much about hedgehogs remains unknown. For one thing, scientists think they haven't even discovered all the hedgehog species. 'We know of at least 14', says hedgehog researcher Nigel Reeve of Britain's University of Surrey Roehampton, 'It's almost certain that there are more species'. The 14 known species are native to Africa and parts of Asia as well as Europe. Some hibernate through cold winters in the north. Others tolerate desert heat near the equator. Some live in urban areas, adapting well to living in close proximity to humans. Others live in areas that rank among the most remote places on the planet.

D

Hedgehogs spend much of their time alone, but Reeve says it would be a mistake to think of them as solitary. 'Hedgehogs do approach each other and can detect the presence of

others by their scent,' he says. It is true that they usually do not interact at close quarters, but that does not mean they are unaware of their neighbours. They may occasionally scrap over food items and rival males attracted to a female may also have aggressive interactions. Still, it's fair to say that, in adulthood, hedgehogs meet primarily to mate, producing litters of four or five hoglets as often as twice yearly.

E

Adult hedgehogs eat just about anything they can find: insects, snakes, bird eggs, small rodents and more. Veterinarians trying to understand gum disease in domesticated hedgehogs have concluded that the varied diet of wild hedgehogs gives them more than nutrition – the hard bodies of insects also scrape the hedgehogs' teeth clean.

F

All hedgehogs also share the same defence mechanism: they retract their vulnerable parts – head, feet, belly – into a quill-covered ball, using special skin down their sides and over their heads and feet. Any perceived threat can make them roll up, including the approach of a biologist, so researchers have invented a new measurement for the animals: ball length. Young hedgehogs have a few extra defence strategies. 'One is to spring up in the air', says Reeve. 'A fox would get a face full of bristles. They make a little squeak while they do it.' Evidence suggests that hedgehogs may also add unpleasant chemicals to their quills to make them even less appealing. In behaviour that may be unique for a vertebrate, they chew substances laden with toxins and then apply frothy saliva to their entire bodies. In one 1977 study, human volunteers pricked themselves with quills from hedgehogs that had coated themselves after chewing on venomous toad skins. The volunteers found those quills much more irritating and painful than clean ones.

G

However, every year, many thousands of the animals die on roads in Europe and elsewhere as they go about their nightly business. Along with intensive farming and pesticides, road kill has taken its toll on hedgehog populations. One 2002 study found the animal numbers had dropped by between 20 and 30 per cent in a single decade. To help combat the decline, the British have established special clinics for injured hedgehogs, urged that anyone making a bonfire check for the animals underneath first, and ensured that hedgehogs can cope with cattle grids. Recently, they even persuaded McDonald's to alter the packaging of its McFlurry ice-cream container, which had been trapping foraging hedgehogs.

H

Ironically, for centuries the English considered these animals as vermin. Even 50 years ago gamekeepers were killing as many as 10,000 a year thinking they were no more than bird-egg-eating pests. In some places today, scientists are coming to the same conclusions all over again. In the 1970s, hedgehogs were introduced to the Hebrides Islands off Scotland to help combat garden slugs. With no natural enemies there, a few hedgehogs soon turned into thousands. Wildlife researchers have watched the hedgehogs reduce the

numbers of rare ground-nesting wading birds by feasting on their eggs. Efforts to cull the animals in the past two years have upset Britain's conservationists who have countered with strategies to relocate the animals.

Questions 1–9

The reading passage has eight sections, **A–H**.

Which sections contain the following information?

NB You may use any letter more than once.

- 1 The significance of establishing the relationship between different species.
- 2 The different habitats where hedgehogs can be found.
- 3 The reason why standard forms of measurement cannot be used for the hedgehog.
- 4 A problem associated with hedgehogs kept as pets.
- 5 Two reasons why hedgehogs are popular with people in the UK.
- 6 Four findings from the latest research into hedgehogs.
- 7 The social habits of the hedgehog.
- 8 The number of hedgehog species already identified.
- 9 The name given to baby hedgehogs.

Questions 10–13

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

Write the correct letter in boxes **10–13** on your answer sheet.

- 10 The study conducted in 1977 revealed a possible reason why
 - A hedgehogs clean their quills.
 - B hedgehogs chew poisonous animal skins.
 - C adult hedgehogs do not leap into the air.
 - D young hedgehogs make a high-pitched noise.
- 11 In Britain, which of the following has NOT been done to protect hedgehogs?
 - A The opening of hospitals just for hedgehogs.
 - B Imposing fines for littering in areas where hedgehogs live.
 - C The alteration of a container produced by a fast-food chain
 - D Alerting people to the potential dangers faced by hedgehogs
- 12 What are the 'conclusions' that scientists on the Hebrides islands have reached again?
 - A Hedgehog numbers are declining.
 - B Hedgehogs pose a threat to other wildlife.
 - C Hedgehogs can safely be introduced there.
 - D Hedgehogs can be used effectively as a natural predator.
- 13 What would conservationists prefer to do on the Hebrides Islands?
 - A Introduce a native predator of hedgehogs.
 - B Kill a small number of hedgehogs.

- C** Remove ground-nesting birds.
- D** Move the hedgehogs elsewhere.

PASSAGE 2

Questions 14–19

Choose the correct heading for each paragraph from the list of headings below,

List of headings	List of paragraphs
i Children's views on birth order	14 Paragraph A
ii Solutions are more important than causes	15 Paragraph B
iii Characteristics common to all children regardless of birth order	16 Paragraph C
iv Doubts about birth-order theory but personal experience supporting it	17 Paragraph D
v A theory that is still supported	18 Paragraph E
vi Birth-order characteristics continuing as children get older	19 Paragraph F
vii A typical example of birth-order behaviour in practice	
viii Exceptions to the rule of birth order	
ix A detailed description of each child in families in general	

ESTABLISHING YOUR BIRTHRIGHTS

Position in the family can play a huge role in shaping character, finds Clover Stroud

A

Last week I was given a potent reminder of how powerful birth order might be in determining a child's character. My son, Jimmy Joe, nine, and my daughter, Dolly, six, were re-enacting a TV talent show. Jimmy Joe elected himself judge and Dolly was a contestant. Authoritative and unyielding, he wielded a clipboard, delivering harsh criticisms that would make a real talent show judge flinch. Initially Dolly loved the attention, but she soon grew tired of his dominance, instigating a pillow fight, then a fist fight. It ended, inevitably, in tears. A visiting friend, with an older, more successful sister, declared it 'classic first child behaviour of dominance and supposed authority'. Dolly's objection to her brother's self-appointed role as leader was justified, he announced, while Jimmy Joe's superiority was characteristic of the forceful personality of firstborns. Birth order, he said, wasn't something they could just shrug off.

B

Debate about the significance of birth order goes right to the heart of the nature versus nurture argument and is, consequently, surrounded by huge controversy. This controversy has raged since the 19th century, when Austrian psychiatrist Alfred Adler argued that birth order can define the way someone deals with life. He identified firstborns as driven and often suffering from a sense of having been 'dethroned' by a second child. Younger children, he stated, were hampered by having been more pampered than older siblings. It's a view reiterated by Professor Frank Sulloway's influential work, *Born to Rebel*. Sulloway, a leading proponent of the birth order idea, argued it has a definitive effect on the 'Big Five' personality traits of openness, conscientiousness, extroversion, agreeableness and neuroticism.

C

According to the birth-order theory, first children are usually well-organised high achievers. However, they can have an overdeveloped sense of entitlement and be unyielding. Second children are sometimes very competitive through rivalry with the older sibling. They're also good mediators and negotiators, keen to keep everyone happy. Middle children, tagged the 'easy' ones, have good diplomacy skills. They suffer from a tendency to feel insignificant beside other siblings and often complain of feeling invisible to their parents. Youngest children are often the most likely to rebel, feeling the need to 'prove' themselves. They're often extroverts and are sometimes accused of being selfish. Twins inevitably find it harder to see themselves as individuals, unless their parents have worked hard to identify them as such. It's not unusual for one twin to have a slightly dominant role over the other and take the lead role.

D

But slapping generalised labels on a child is dangerous; they change all the time, often taking turns at being the 'naughty one' or the 'diligent one'. However, as one of five children, I know how hard it is to transcend the tags you earn according to when you were born. It is unsurprising then that my eldest sister is the successful entrepreneur, and that, despite covering all the big bases of adult life like marriage, kids and property, my siblings will probably always regard me as their spoilt younger sister.

E

'As the oldest of three, I've found it hard not to think of my own three children as having the same personality types that the three of us had when I was growing up, says Lisa Cannan, a teacher. 'I identify with my eldest son, who constantly takes the lead in terms of organisation and responsibility. My daughter, the middle child, is more cerebral than her brothers. She's been easier than them. She avoids confrontation, so has an easy relationship with both boys. My youngest is gorgeous but naughty. I know I'm partly to blame for this, as I forgive him things the elder two wouldn't get away with.'

F

As a parent, it's easy to feel guilty about saddling a child with labels according to birth order, but as child psychologist Stephen Bayliss points out, these characteristics might be better attributed to parenting styles, rather than a child's character. He says that if a parent is worried about having encouraged, for example, an overdeveloped sense of dominance in an older sibling or spoiled a younger child, then it's more useful to look at ways this can be addressed than over-analysing why it happened. Bayliss is optimistic that as adults we can overcome any negative connotations around birth order. 'Look at the way you react to certain situations with your siblings. If you're unhappy about being treated as a certain type of personality, try to work out if it's a role that you've willingly accepted. If you're unhappy with the role, being dynamic about focusing on your own reactions, rather than blaming theirs, will help you overcome it. Change isn't easy but nobody need be the victim of their biography.

Questions 20–23

Look at the following statements and the list of people below.

*Match each statement with the correct person, **A–D**.*

NB You may use any letter more than once.

- 20** Experience as a child can affect behaviour as a parent.
- 21** Birth order may not be the main reason why children have the personalities they have.
- 22** There is a link between birth and a group of important characteristics.
- 23** It is possible for people to stop feeling bad about how family members behave with them.

List of people

- A** Alfred Adler
- B** Professor Frank Sulloway
- C** Lisa Cannan
- D** Stephen Bayliss

Questions 24–26

Complete the sentences below.

*Choose **ONE WORD ONLY** from the passage for each answer.*

- 24** First-born children have expectations that are too high with regard to
- 25** Middle children are often considered by their parents.
- 26** Youngest children may be described as by other people.

READING PASSAGE 3

A

Maps vary enormously, from imposing images of the world and its parts to private jottings intended to give an approximate idea of the twentieth-century Antarctic. The materials on which maps are to be found, similarly range from scraps of paper to plaster walls, by way of parchment, copper coins, mosaics, marble, woollen tapestries, silk, gold and more. Attitudes towards maps also vary greatly, and are subject to modification over time.

B

In recent decades, the view that maps should be assessed primarily in terms of their geometrical accuracy has radically changed. At the same time, they have become available to a range of disciplines. This development has been encouraged by the growing popularity of interdisciplinary studies and by the increasing awareness and appreciation of the importance of the visual – which may be a consequence of the spread of television and the internet, and the ease with which images can be created and manipulated in a digital environment. Academic historians of all types – social, political, diplomatic and fine art, literature specialists, and family historians take an interest in maps and find that they sometimes offer perspectives on their subjects that are not possible from other sources.

C

All have contributed to a re-evaluation of the subject. It is accepted that for some purposes, such as administration and terrestrial and maritime navigation, mathematical accuracy still plays a major and even sometimes a paramount role in cartography. In other contexts, such as maps of underground railway systems, or maps used for propaganda purposes, such accuracy is irrelevant, and at times even undesirable. Conversely, the very aspects that tended traditionally to be condemned or disregarded, such as distortions and decoration, become of enormous significance. They can give particularly precious insights into the mentalities of past ages, and the views and lives of their creators, as well as being packed with more general cultural information such as the receptiveness to artistic fashions.

D

For many map enthusiasts the fascination of maps ironically stems from their necessary lack of truth. They can be regarded as the most successful pieces of fiction ever to be created because most users instinctively suspend disbelief until they find that the map they are using does not give truthful information. Yet it has to be that way. Given the impossibility of representing the total reality, with all its complexity, on a flat surface, hard decisions have to be taken as to what features to select for accurate representation, or indeed for representation at all. For most of the time this process of selection is almost instinctive. The mapmaker knows the purpose he intends for his map, and beyond that he is unwittingly guided by the values and assumptions of the time in which he lives – unless these are in conflict with his own value systems, as was the case with Nicholas Philpot Leader in 1827.

The map of Ireland (then part of the UK) that Leader commissioned was intended as a strong attack on the then British government.

E

In order to meet the map's purpose, the information that is represented will be prioritized according to importance as perceived by the mapmaker – and not necessarily in accordance with actual geographical size. Even on modern national topographic mapping, such features as motorways will be shown far larger than they actually are because they are important to drivers and users will expect to see them without difficulty. Conversely, large features that are considered unimportant might be completely ignored or reduced in size, like parks and other public spaces in some town maps. Often maps will show things that are invisible in the real world, such as relative financial affluence, as in Charles Booth's maps of London in the nineteenth century, or the geology far below the surface of the planet, as in an 1823 map of the land around Bath.

F

Sometimes the purpose of the map is even simpler and has nothing to do with geography. The Hereford World Map proclaims the insignificance of man in the face of the divine and the eternal. The plan of Ostia harbour of AD 64 primarily serves as a demonstration of the Emperor Nero's benevolence. Sometimes, as in depictions of the imaginary land of Utopia, physical reality is totally absent or so distorted as to be geographically meaningless. Instead the map serves as a commentary on the gap between the aspirations and the feeble achievements of mankind. The quality of a map must be judged by its ability to serve its purpose, and not simply by its scientific precision, and in that context aesthetic and design considerations are every bit as important as the mathematical, and often more so.

G

Plainly, to interpret maps as having followed a path of ever-increasing scientific perfection over time is to miss the main point. In fact, they have responded to the mentalities, and met the requirements of the societies in which they have been created. In ancient Greece and Babylon, and in eighteenth- and twentieth-century Europe, the preoccupation with precision and the scientific indeed predominated. In early modern China and nineteenth-century Europe the administrative use of mapping came to the fore. By contrast, for long periods of time and in many civilizations, the major preoccupation was to define and to depict man's place in relationship to a religious view of the universe. This was particularly evident in medieval Europe and Aztec Mexico. Clearly, maps can only be fully understood in their social context.

Questions 27–31

Reading Passage 3 has seven paragraphs, **A–G**.

Which paragraph contains the following information?

- 27** Examples of maps showing features that cannot be seen on the ground.
- 28** A list of media that have been used in the creation of maps.
- 29** Examples of the main function of maps in various periods and places.
- 30** A contrast between different types of maps with regard to a requirement for accuracy.
- 31** Speculation about reasons for a change in attitudes towards maps.

Questions 32–39

Match each map with the correct purpose, **A–I**.

- 32** maps of Utopia
- 33** Charles Booth's maps of London
- 34** map commissioned by Nicholas Philpot Leader
- 35** map of Bath area
- 36.** early modern Chinese maps
- 37** map of the Antarctic
- 38** plan of Ostia harbour
- 39** Hereford World Map

- A** to portray an area very roughly
- B** to create a decorative work
- C** to express political criticism
- D** to show variations in wealth
- E** to show differences below ground level
- F** to show the unimportance of human beings
- G** to glorify the ruler of the country
- H** to contrast ideal and actual human development
- I** to assist in the management of the country

Question 40

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

- 40** What is the best title for Reading Passage 3?
 - A** Differences in map-making around the world
 - B** A growing interest in drawing maps
 - C** Re-evaluating the role of maps
 - D** Making maps more accurate