9 The natural world

Flora and fauna, agriculture



Flora and fauna

1.1 **How many plants and animals do you know? Can you name:**

A five animals found in Africa?
.....

B five different types of flower?
.....

C five types of fruit?
.....

D five animals found in Australia?
.....

E five different types of tree?
.....

F five types of vegetable?
.....

1.2 **Are these words associated with plants or animals? Put the words into the correct column. Which word can go in both columns?**

flora fauna vegetation branch twig root coat predator beak trunk fur hide scales feathers paw claw thorn petal horn

Animals	*Plants*

Which five words in the animal column are connected to their skin or covering?

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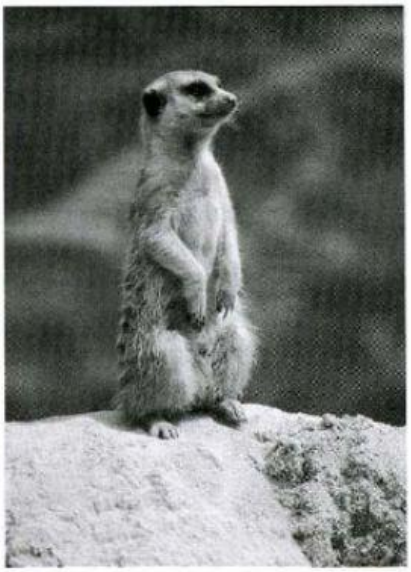
We say we must take care of ***nature***. NOT ~~*We must take care of the nature.*~~ *Natural* is the adjective form: *It is a natural process.* NOT ~~*It is a nature process.*~~

1.3 **COMPOUND NOUNS** **Complete the sentences by adding one of these words *animal, human, nature, natural* .**

1 It's *human* ..... nature ..... to want to find a solution to our problems.
2 Vegans do not use or eat any ..... *products.*
3 I would rather be served by a ..... *being* than by a computer.
4 I am constantly amazed by how beautiful and how destructive *mother* ..... can be.
5 Man is said to be the most dangerous creature of all the ..... *kingdom.*
6 Animals are much happier living in their ..... *habitat.*
7 Manmade disasters such as chemical spills can destroy the ..... *balance.*
8 In some countries prisoners are denied basic ..... *rights.*

LIVEWORKSHEETS

1.4 9a **Listen to a description of an animal called a meerkat and complete the table.**



Habitat	*Diet*
• *Found in South Africa in (1)..... areas.* • *Avoids woodland and thick (2)..... .* • *It sleeps in (3)..... .* • *If necessary, the meerkat will make a (4)..... between rocks.*	• *Meerkats mostly eat (5)..... , (6)..... and (7)..... .* • *They occasionally eat small rodents and the (8)..... of certain plants.*

Agriculture

2.1 **Which is the odd one out? Circle the word which is different from the others and say why.**

1 rose tulip daisy (weed) We want to grow the others.
2 plant grow cultivate soil .....
3 crop plant shrub bush .....
4 organic natural chemical biological .....
5 tropical subtropical humid arid .....
6 arid desert semi-arid tropical .....
7 endemic native introduced local .....

2.2 **Read the text and then decide if the statements below are true or false. Find words in the text which mean the same or the opposite of the words in bold.**

Introduced species

Since the birth of agriculture, farmers have tried to avoid using pesticides by employing various biological methods to control nature. The first method involved introducing a predator that would control pests by eating them. This was used successfully in 1925 to control the prickly pear population in Australia. The prickly pear had originally been used as a divider between paddocks. However, it eventually spread from a few farms to 4 million hectares of farming land, rendering them unusable. The Cactoblastis moth larvae was introduced to help control the situation and within ten years, the prickly pear was virtually eradicated. Further attempts at biological control weren't so successful. When farmers tried to eliminate the cane beetle by introducing the South American cane toad, the results were catastrophic. The cane toad did not eat the cane beetle and the toad population spread rapidly leading to the decline of native species of mammals and reptiles.

1 Farmers do not like using **chemicals to kill pests.** .....
2 The prickly pear was planted as a type of barrier between **fields.** .....
3 The *Cactoblastis* moth **killed off** nearly all prickly pear plants. .....
4 The cane toad was a **native** species to Australia. .....
5 Using the cane toad was **very successful.** .....

LIVEWORKSHEETS

2.3 **Now read the rest of the text and match the words in *italics* to the definitions below.**

Other introduced species have proved similarly *disastrous* among native Australian animals. Since the introduction of the cat, the fox and the rabbit from Europe, 19 species of native animals have become *extinct* and a further 250 species are considered to be either *endangered* or *vulnerable*. The modern-day approach to the biological control of pests is through *genetically modified* crops. It remains to be seen whether this controversial method will have any long-term *repercussions*, particularly in regards to the *ecological balance* of the environment where they are grown. Some fear that insects may *become resistant* to these new crops and therefore become even more difficult to control.

1 at risk .....
2 negative effects .....
3 to stop being affected by something .....
4 at risk of dying out .....
5 no longer existing .....
6 crops whose genes have been scientifically changed .....
7 extremely bad or unsuccessful .....
8 the relationship between plants, animals, land, air, and water .....

2.4 **WORD BUILDING** **Complete the table. You do not need to write anything in the shaded areas.**

Noun	***Adjective***	***Adverb***	***Verb***
agriculture	*agricultural*		
ecology			
			evolve
	extinct		..... *extinct*
nature			
	genetic		

3 **Improve the text by replacing the words in *italics* with a suitable word or phrase from this unit.**

Some farmers believe that growing [1] *fruit and vegetables* that have been [2] *changed so that their genes are different* is a good way to [3] *totally stop* pests and improve the quality of their produce. However, this type of [4] *farming* has both advantages and disadvantages.

One of the advantages is that farmers can grow plants that produce a poison that is harmful to [5] *small animals like flies and caterpillars*. This means that farmers will not have to use [6] *chemicals to kill these animals* and so this should be better for the surrounding environment and the [7] *earth that plants grow in*. As a result, it could help to protect other [8] *plants* as well as the [9] *living space* of any animals in the area.

On the other hand, farmers usually only spray their fields once or twice per year but these new plants would be toxic all year round. Furthermore, it is possible that over time the pests may [10] *stop being killed by* the toxins and so the problem would be worse than ever. The toxins may also be poisonous to other plants and animals and this would upset the [11] *way plants and animals live and grow together* and may lead to more animals becoming [12] *at risk of extinction*.

4 **PRONUNCIATION** 9b **Each of the words in the box below has a weak sound (ə) or *schwa*, e.g. *about*. Underline the schwa in each word, then listen and check your answers. Practise saying the words. There may be more than one schwa in each word.**

adapt
agriculture
catastrophe
chemical
climate
disastrous
endangered
genetically
human
natural
vulnerable

LIVEWORKSHEETS

Test practice

Academic Reading

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.

Test Tip

This reading text is also good practice for General Training section 3.



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[1]. 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.'

[1] *genome*: the complete set of genetic material of a living thing

LIVEWORKSHEETS

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.

Test Tip

For questions that require you to locate information, you also need to understand the function of the information. For example, for question 1 you will need to find the part of the text which tells you *why* it is important to know how animal species are connected (i.e. the *relevance* of this information).

LIVEWORKSHEETS

Questions 1–9

The reading passage has eight sections A–H. Which sections contain the following information? Write the correct letter (A–H) next to questions 1–9 below.

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.

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.

LIVEWORKSHEETS