

Insect Numbers Level 2 reading tasks

Name _____ Date _____

Adapted from:

<https://www.theguardian.com/environment/2019/feb/10/plummeting-insect-numbers-threaten-collapse-of-nature>

Plummeting insect numbers 'threaten collapse of nature'

Exclusive: Insects could vanish within a century at current rate of decline, says global review

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Environment editor

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The world's insects are hurtling down the path to extinction, threatening a "catastrophic collapse of nature's ecosystems", according to the first global scientific review.



More than 40% of insect species are declining and a third are endangered, the analysis found. The rate of extinction is eight times faster than that of mammals, birds and reptiles. The total mass of insects is falling by a precipitous 2.5% a year, according to the best data available, suggesting they could vanish within a century.

The planet is at the start of a sixth mass extinction in its history, with huge losses already reported in larger animals that are easier to study. But insects are by far the most varied and abundant animals, outweighing humanity by 17 times. They are "essential" for the proper functioning of all ecosystems, the researchers say, as food for other creatures, pollinators and recyclers of nutrients.

"Unless we change our ways of producing food, insects as a whole will go down the path of extinction in a few decades," they write. "The repercussions this will have for the planet's ecosystems are catastrophic to say the least."

The analysis, published in the journal Biological Conservation, says intensive agriculture is the main driver of the declines, particularly the heavy use of pesticides. Urbanisation and climate change are also significant factors.

"If insect species losses cannot be halted, this will have catastrophic consequences for both the planet's ecosystems and for the survival of mankind," said Francisco Sánchez-Bayo, at the University of Sydney, Australia, who wrote the review with Kris Wyckhuys at the China Academy of Agricultural Sciences in Beijing.

The 2.5% rate of annual loss over the last 25-30 years is "shocking", Sánchez-Bayo told the Guardian: "It is very rapid. In 10 years you will have a quarter less, in 50 years only half left and in 100 years you will have none."

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One of the biggest impacts of insect loss is on the many birds, reptiles, amphibians and fish that eat insects. “If this food source is taken away, all these animals starve to death,”

The new analysis selected the 73 best studies done to date to assess the insect decline. Butterflies and moths are among the worst hit. For example, the number of widespread butterfly species fell by 58% on farmed land in England between 2000 and 2009. The UK has suffered the biggest recorded insect falls overall, though that is probably a result of being more intensely studied than most places.

Bees have also been seriously affected, with only half of the bumblebee species found in Oklahoma in the US in 1949 being present in 2013. The number of honeybee colonies in the US was 6 million in 1947, but 3.5 million have been lost since.

“The main cause of the decline is agricultural intensification,” Sánchez-Bayo said. “That means the elimination of all trees and shrubs that normally surround the fields, so there are plain, bare fields that are treated with synthetic fertilisers and pesticides.” He said the demise of insects appears to have started at the dawn of the 20th century, accelerated during the 1950s and 1960s and reached “alarming proportions” over the last two decades.

He thinks new classes of insecticides introduced in the last 20 years, including neonicotinoids and fipronil, have been particularly damaging as they are used routinely and persist in the environment: “They sterilise the soil, killing all the grubs.”

The world must change the way it produces food, Sánchez-Bayo said, noting that organic farms had more insects and that occasional pesticide use in the past did not cause the level of decline seen in recent decades. “Industrial-scale, intensive agriculture is the one that is killing the ecosystems,” he said.

Sánchez-Bayo said the unusually strong language used in the review was not alarmist. “We wanted to really wake people up” and the reviewers and editor agreed, he said. “When you consider 80% of biomass of insects has disappeared in 25-30 years, it is a big concern.”

Other scientists agree that it is becoming clear that insect losses are now a serious global problem. “The evidence all points in the same direction,” said Prof Dave Goulson at the University of Sussex in the UK. “It should be of huge concern to all of us, for insects are at the heart of every food web, they pollinate the large majority of plant species, keep the soil healthy, recycle nutrients, control pests, and much more. Love them or loathe them, we humans cannot survive without insects.”

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1. Detailed reading (10 marks)

a) When could insects disappear?

_____ (L2.11, 1 mark)

b) How many more insects are there than humans?

_____ (L2.11, 1 mark)

c) Why do we need insects?

_____ (L2.11, 4 marks)

d) Give some reasons for insect decline.

_____ (L2.11, 2 marks)

e) What effect will this decline have?

_____ (L2.11, 1 mark)

f) How many honeybees have been lost in the US since 1947?

_____ (L2.11, 1 mark)

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2. Style and tone (3 marks)

a) Which **two** words best describe the style of the text?

A	conversational	
B	technical	
C	informative	
D	instructive	

(L2.19, 2 marks)

b) Which word best describes the writer's tone?

A	angry	
B	informal	
C	urgent	
D	cheerful	

(L2.19, 1 mark)

3. Language (7 marks)

a) The writer has used the word **hurtling** in paragraph 1. What effect does this have?

_____ (L2.14, 1 mark)

b) Find two different language features used in the text and give an example of each. Explain the effect each feature has on the reader.

Language Technique	Example quote from the text	Effect
1.		
2.		

(L2.14, 6 marks)

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Curriculum mapping and notes

Notes

A topical scientific text suitable for L2 Functional Skills (FS) English and beyond (see page 6). It exceeds the requirements of a 'typical FS L2 text' (in length, sentence structure, vocabulary and general complexity) but nonetheless provides a useful focus for work on language features, technical vocabulary, etc.

FUNCTIONAL SKILLS ENGLISH 2018 (takes effect from September 2019)

Functional English - Reading

'Reading' within Functional Skills English qualifications is defined as the independent understanding of written language in specific contexts and can be demonstrated through the use of texts on screen or on paper.

✓ = main **content** covered in this resource, although this will vary with the student group and how the resource is used by the teacher. → or ← = not the main objective but annotated to show progression across levels. For a full list of descriptors for speaking, listening & communicating; reading and writing see:

DfE (Feb 2018), *Subject content functional skills:*

<https://www.gov.uk/government/publications/functional-skills-subject-content-english>

Learning aims for reading L1-2 Read a range of different text types confidently and fluently, applying their knowledge and understanding of texts to their own writing.

*Content (and *text types) at each level subsumes and builds upon that at lower levels.*

Level 1	Level 2
<p>L1.9 Identify and understand the main points, ideas and details in texts →</p> <p>L1.10 Compare information, ideas and opinions in different texts</p> <p>L1.11 Identify meanings in texts and distinguish between fact and opinion</p> <p>L1.12 Recognise that language and other textual features can be varied to suit different audiences and purposes →</p> <p>L1.13 Use reference materials and appropriate strategies (e.g. using knowledge of different word types) for a range of purposes, including to find the meaning of words</p> <p>L1.14 Understand organisational and structural features and use them to locate relevant information (e.g. index, menus, subheadings, paragraphs) in a range of straightforward texts</p> <p>L1.15 Infer from images meanings not explicit in the accompanying text</p> <p>L1.16 Recognise vocabulary typically associated with specific types and purposes of texts (e.g. formal, informal, instructional, descriptive, explanatory, persuasive) →</p> <p>L1.17 Read and understand a range of specialist words in context</p> <p>L1.18 Use knowledge of punctuation to aid understanding of straightforward texts</p>	<p>L2.11 Identify the different situations when the main points are sufficient and when it is important to have specific details ✓ Q1abcde</p> <p>L2.12 Compare information, ideas and opinions in different texts, including how they are conveyed</p> <p>L2.13 Identify implicit and inferred meaning in texts</p> <p>L2.14 Understand the relationship between textual features and devices, and how they can be used to shape meaning for different audiences and purposes ✓ Q3ab</p> <p>L2.15 Use a range of reference materials and appropriate resources (e.g. glossaries, legends/keys) for different purposes, including to find the meanings of words in straightforward and complex sources</p> <p>L2.16 Understand organisational features and use them to locate relevant information in a range of straightforward and complex sources</p> <p>L2.17 Analyse texts, of different levels of complexity, recognising their use of vocabulary and identifying levels of formality and bias</p> <p>L2.18 Follow an argument, identifying different points of view and distinguishing fact from opinion</p> <p>L2.19 Identify different styles of writing and writer's voice ✓ Q2ab</p>
<p>Scope of study – learners should read *texts that include:</p>	
<p>straightforward texts on a range of topics and of varying lengths that instruct, describe, explain and persuade.</p>	<p>straightforward and complex ✓ texts on a range of topics and varying lengths that instruct, describe, explain ✓ & persuade ✓.</p>

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Curriculum mapping and notes

GCSE ENGLISH LANGUAGE		Bold font indicates main coverage.
READING (50% weighting)		
A1	(a) Identify and interpret explicit and implicit information and ideas. ✓Q1 (b) Select and synthesise evidence from different texts.	
A2	Explain, comment on and analyse how writers use language and structure to achieve effects and influence readers, using relevant subject terminology to support their views ✓ Q3	
A3	Compare writers' ideas and perspectives, as well as how these are conveyed, across two or more texts.	
A4	Evaluate texts critically and support this with appropriate textual references.	

DfE (2013), English Language *GCSE subject content and assessment objectives*.

<https://www.gov.uk/government/publications/gcse-english-language-and-gcse-english-literature-new-content>

T LEVEL (Level 3 technical qualifications) General English Competencies (GEC)

Descriptors are only included for competencies covered in this resource. See source for full descriptors.

T level learners must achieve Level 2 Functional English OR an English GCSE grade from 4 to 9. In addition, the *Outline Content for Technical Qualifications* includes maths, English and digital skills that are specific for each T Level. These skills are implicitly taught [embedded] and are in addition to the minimum maths and English requirements for the overall T Level. There are six GEC competencies. Source:

<https://www.instituteforapprenticeships.org/t-levels/developing-t-levels/>

1. Convey technical information to different audiences

2. Present information and ideas

3. Create texts for different purposes and audiences

4. Summarise information/ideas

5. Synthesise information

Synthesising information is an essential skill in the workplace where there is a requirement to gather information from different sources. People with this GEC select the appropriate sources to reflect the particular purpose. They read, understand and synthesise the information in a way that suits the audience and purpose. They recognise the difference between fact and opinion and recognise bias in a source.

✓ Q1 Q2 Q3

6. Take part in / Lead discussions

An **editable Word version** of this document is available, **on a one to one exchange basis for your own resource contribution** (for registered contributors only).

If you wish to become a registered contributor, please contact Maggie using the site contact link.

There is no answer sheet for this resource.

If you would like to provide one please get in contact.