

The Silent Network: The Wood Wide Web

Category: Non-Fiction - Advanced Botanical Science | Time Allowed: 45 Minutes | Total Marks: 35

Candidate Name: _____ Date: _____ Score: _____

READING EXTRACT - Read carefully before answering Section A questions

- 1 Beneath the temperate forest floor lies a vast, subterranean biological nexus composed of microscopic fungal filaments termed mycorrhizal hyphae. Popularly dubbed the 'Wood Wide Web', this subterranean architecture symbiotically interconnects the root systems of disparate tree species, facilitating an intricate distribution network for carbohydrates, vital minerals, water, and
- 5 defensive biochemical signals across the woodland canopy.

Pioneering forestry research indicates that mature 'mother trees' utilise these fungal conduits to channel surplus photosynthetic sugars to struggling saplings sheltered beneath shaded canopies. When an individual tree is subjected to foliar pest infestations, it transmits airborne and subterranean chemical alarms via the mycorrhizal lattice, prompting adjacent trees to proactively

10 synthesise tannin defensive compounds before the threat manifests.

Scientists caution, however, against anthropomorphising this phenomenon as conscious altruism. The fungi act as transactional intermediaries rather than benevolent couriers, demanding a tariff of approximately twenty to thirty percent of the tree's carbon reserves in exchange for nutrient delivery. Nonetheless, this paradigm shift has fundamentally dismantled the traditional Darwinian

15 view of forests as cutthroat battlegrounds of solitary competitors, revealing an intricately interdependent super-organism.

11+ EXAMINER GUIDANCE & STUDY TIPS FOR THIS EXTRACT

1. Active Reading: Read the extract twice. Underline key verbs, adjectives, and character reactions.
2. VIPERS Focus: Look for context clues around unfamiliar words to deduce meanings accurately.
3. Evidence: For 2-mark and 3-mark questions, always quote directly or paraphrase specific evidence.
4. Timing: Spend ~15 minutes reading, 15 minutes on Comprehension, and 15 minutes on Creative Writing.
5. Need 1-to-1 preparation? Tailored tuition with Fiaraz Iqbal: www.themathsandsciencetutor.co.uk

Section A: VIPERS Comprehension Questions

Answer all questions in full sentences using evidence from the extract. Total: 15 Marks

[V] VOCABULARY

Question 1

[2 marks]

Define "anthropomorphising" and "symbiotically" in the context of the passage.

[R] RETRIEVAL

Question 2

[1 mark]

What proportion of a tree's carbon reserves do fungi typically extract as their "tariff"?

[I] INFERENCE

Question 3

[2 marks]

Why is the fungal network metaphorically termed the "Wood Wide Web"? Give two parallels.

[I] INFERENCE

Question 4

[2 marks]

Why do scientists reject the notion that trees exhibit "conscious altruism"?

[E] EXPLAIN

Question 5

[3 marks]

How does this discovery challenge the traditional historical view of evolutionary forest biology?

[S] SUMMARISE

Question 6

[3 marks]

Provide a concise summary (under 40 words) explaining how the mycorrhizal network functions.

Use formal academic register, rhetorical devices, and balanced arguments leading to a reasoned conclusion.

Incorporate sophisticated sensory descriptions, metaphors, and personification suitable for top-mark 11+ creative writing.

[] Varied Sentence Openers [] Figurative Language [] Fronted Adverbials [] Accurate Dialogue Punctuation
[] Sensory Imagery (Sight, Sound, Touch) [] Powerful Verbs [] Ambitious 11+ Vocabulary Choices

Section C: Examiner Mark Scheme & Model Answers

Comprehensive answers, acceptable variations, and 11+ mark allocation criteria.

Question 1 [V]

"Anthropomorphising": attributing human feelings/intentions to non-human entities. "Symbiotically": mutually beneficial interaction between distinct organisms.

Question 2 [R]

Twenty to thirty percent (20-30%) of the tree's carbon reserves.

Question 3 [I]

1) It forms an interconnected underground communications network; 2) It transfers data (chemical signals) and resources between distinct nodes (trees).

Question 4 [I]

The exchange is transactional and driven by evolutionary survival: fungi facilitate transfers to secure their own required carbon supply, not out of empathy.

Question 5 [E]

It challenges the simplistic view that nature is purely solitary competition, demonstrating that cooperative symbiotic networks are essential for ecosystem resilience.

Question 6 [S]

Underground fungal hyphae link tree roots, facilitating bidirectional exchanges of water, sugars, and warning signals in return for carbon nutrients across the forest.

CREATIVE WRITING BAND MARKING SCHEME (20 Marks Total):

- Band 1 (16-20 Marks): Exceptional atmosphere, compelling narrative voice, sophisticated vocabulary, diverse syntax.
- Band 2 (11-15 Marks): Clear narrative structure, good descriptive detail, accurate paragraphs and punctuation.
- Band 3 (6-10 Marks): Basic story progression, simple adjectives, occasional punctuation errors.
- SPaG (5 Marks): Award up to 5 additional marks for spelling accuracy, ambitious vocabulary, and neat handwriting.

EXPERT 1-TO-1 TUITION WITH FIARAZ IQBAL

Looking for top grammar school or independent school entrance (QE Boys, Henrietta Barnett, Latymer, King's)?

- Over 30 years of classroom teaching & senior school leadership experience (Former Headteacher).
- Proven track record preparing students for 11+ GL Assessment, CSSE, ISEB, and CEM exams.
- Specialist tuition in English Comprehension, Creative Writing, 11+ Mathematics, and Verbal Reasoning.
- Live online 1-to-1 lessons available across the UK and internationally (Singapore, Hong Kong, Dubai).

WhatsApp: +44 7760 257814 | Website: www.themathsandsciencetutor.co.uk

Book your free 30-minute diagnostic consultation today.