

Paper Reference(s) 9BN0/03

Pearson Edexcel Level 3 GCE

Biology A (Salters Nuffield)

Advanced

PAPER 3: General and Practical Applications in Biology

Wednesday 18 June 2025 – Morning

Time: 2 hours

Pre-release Material

Scientific article for use with Question 8

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Scientific article for use with Question 8

THE BIG SLEEP

Were human ancestors able to hibernate and what could that mean for our health, asks Alex Wilkins.

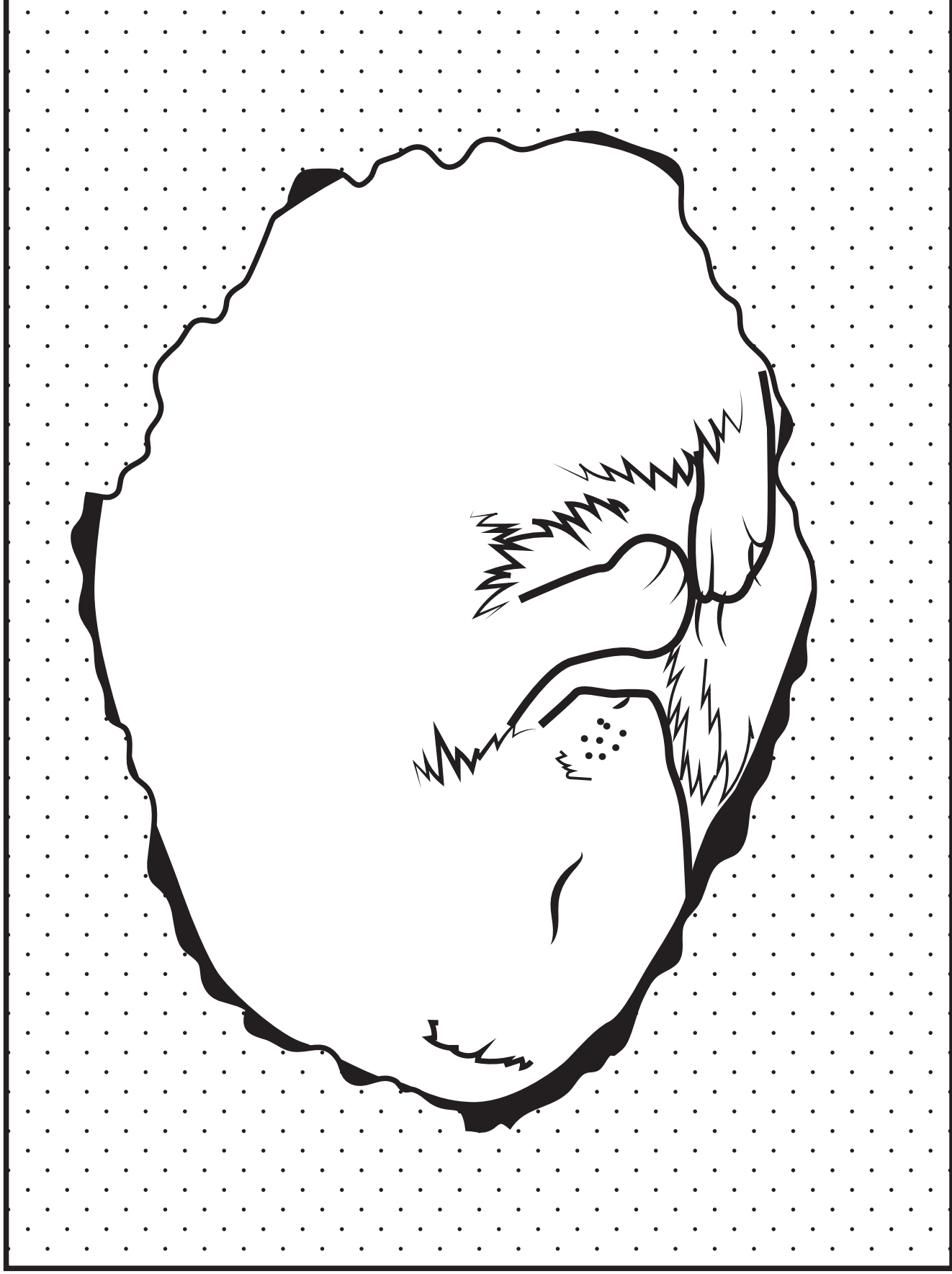
- 1. IF YOU could rewind the evolutionary clock millions of years, you might discover that your ancestors had a remarkable trait. It wouldn't be obvious at first. But in certain conditions – if food were scarce or there were a cold snap – it is possible that their eyes would grow heavy and their bodies begin to slow until, eventually, they switched off entirely. They would be hibernating.**
- 2. In this low-energy state, today's hibernators can fend off a remarkable array of threats, from the inside and out. Extreme cold and famine are the obvious ones, but hibernation also has the power to combat conditions that plague modern humans, including Alzheimer's disease, stroke and heart attack. It could even hold the key to longevity and colonising space. No wonder some researchers are keen to reinstate what might have been our long-lost superpower.**

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Scientific article continued.

The Arctic ground squirrel can lower its body temperature to -2.9°C during torpor



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