



QUESTION WORKBOOK

Resistance, drift and the evidence: selection where you can watch it happen

Evolution and speciation · Unit B19

AQA 3.4.4, 3.7.3 · OCR A 4.2.2, 6.1.2 · Edexcel A Topic 4, Topic 6 · CAIE 17.2, 17.3

6 questions · 20 marks

NAVY SCREEN EDITION

SECTION A · Short, 1 to 2 marks

A1 State what a genetic bottleneck is, and state one species that still shows the effect of one. [2]

SECTION B · Standard, 3 to 5 marks

B1 Compare vertical and horizontal gene transfer as ways in which antibiotic resistance spreads among bacteria. [4]

B2 Describe two independent lines of evidence for common ancestry, and describe why the agreement between such lines matters. [4]

B3 Explain how genetic drift changes the allele frequencies of a population, and explain why its effect is largest in a small population. [4]

B4 Explain the biological reason a patient is told to finish a prescribed course of antibiotics. [3]

B5 A crop is engineered to make a toxin that kills a pest insect, and resistance to that toxin is recessive. Farmers growing it are required to plant a refuge of untreated plants alongside. Suggest how the refuge slows the spread of resistance. [3]
