

Evidence For Evolution

GCSE Biology · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Explain why scientists cannot be certain how life began on Earth. (2 marks)

Step 1 · Soft bodies

Many early forms of life were soft-bodied and left few traces behind.

Step 2 · Destroyed traces

Traces that did form have mostly been destroyed by geological activity (e.g. rocks being worn away or melted).

Answer: Few fossils of early soft-bodied life; most destroyed by geological activity

Check: So there are gaps in the fossil record.

2. Now try one with the steps

Explain how antibiotic-resistant bacteria are evidence for evolution. (4 marks)

Step 1 · Variation

Step 2 · Selection

Step 3 · Reproduction

Step 4 · Evidence

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. What are fossils? [1]

2. Describe three ways fossils can form. [3]

3. Give one cause of extinction. [1]
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4. What is MRSA? [1]
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5. Give one way patients can reduce the development of antibiotic resistance. [1]
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6. Explain how fossils provide evidence for evolution. [2]
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7. Explain why organisms in peat bogs can form fossils without being replaced by minerals. [2]
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8. Explain why bacteria can evolve faster than animals. [1]
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9. Resistant samples rose from 8% to 20%. Calculate the percentage increase in the proportion of resistant samples. [2]
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10. Explain why restricting antibiotic use in farming can reduce resistance in human pathogens. [2]
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11. One resistant bacterium divides every 30 minutes with no competition. How many are there after 5 hours? [2]
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12. Explain why developing new antibiotics is unlikely to keep up with resistance. [2]
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13. Explain why there are gaps in the fossil record. [2]
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14. Suggest why a species living only on one island is at higher risk of extinction. [2]

4. Before you hand it in

"Antibiotics cause bacteria to mutate."

Resistant mutants already exist by chance; the antibiotic SELECTS them by killing the others.

"People become resistant to antibiotics."

Say 'bacteria become resistant', not 'the person becomes resistant'.

"Fossils are always bones."

Fossils include preserved remains, mineral replacements and traces such