

Trophic levels in an ecosystem: practice questions

4 questions • 9 marks • mark scheme at the back

For AQA GCSE Biology 8461 and Combined Science: Trilogy 8464. **Triple only** is not in Combined Science. **Higher tier** is only on the Higher paper.

Name

Total / 9

1 **Triple only** [1 mark]

A food chain is: grass → grasshopper → frog → snake. Nothing eats the snake. Which statement about the snake is correct?

- A. ☐ It is at trophic level 3 and is a secondary consumer
- B. ☐ It is at trophic level 4 and is a primary consumer
- C. ☐ It is at trophic level 4 and is an apex predator
- D. ☐ It is at trophic level 1 and is a producer

2 **Triple only** [2 marks]

Explain how decomposers break down dead animals.

3 **Triple only** [3 marks]

The table shows the biomass at each trophic level in a food chain. (a) A student draws a pyramid of biomass using a scale of 1 mm = 20 g per m². Calculate the length of the bar for the caterpillars. (1) (b) Calculate the efficiency of biomass transfer from the caterpillars to the blue tits. Give your answer as a percentage. (2)

Biomass in a woodland food chain		
Trophic level	Organism	Biomass in g per m ²
1	Oak leaves	2000
2	Caterpillars	240
3	Blue tits	18

Answer =

4

Triple only

[3 marks]

Only about 10% of the biomass at one trophic level is transferred to the next. Explain why.

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Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1] Triple only

C C (1)

2. [2] Triple only

- they secrete enzymes into the environment / onto the dead material (1)
- small soluble food molecules then diffuse into the microorganism (1)
- do not accept decomposers eat / ingest the dead animal

3. [3] Triple only

- (a) $240 \div 20 = 12 \text{ mm}$ (1)
- (b) $18 \div 240 \times 100$ (1)
- $= 7.5\%$ (1) allow 7.5 with no working for 2 marks

4. [3] Triple only

- not all the ingested material is absorbed, some is egested as faeces (1)
- large amounts of glucose are used in respiration, and lost as carbon dioxide and water (1)
- water and urea are lost in urine (1)
- ignore energy 'used up' unqualified