

Feeding Relationships Biomass

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

Name _____ Class _____ Date _____

1. Worked example

In the food chain grass → rabbit → fox, name the producer, primary consumer and secondary consumer. (3 marks)

Step 1 · Producer

Grass: a photosynthetic organism that makes glucose, the source of all biomass in the chain.

Step 2 · Primary consumer

Rabbit: eats the producer.

Step 3 · Secondary consumer

Fox: eats the primary consumer (a predator; the rabbit is its prey).

Answer: Grass; rabbit; fox

Check: Arrows show the direction of transfer of biomass (and energy).

2. Now try one with the steps

Explain the shape of a predator–prey graph in which the predator peak comes after the prey peak. (4 marks)

Step 1 · Prey rise

Step 2 · Predator rise

Step 3 · Prey fall

Step 4 · Predator fall

Answer:

3. Practice

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

1. What do the arrows in a food chain represent? [1]

2. Why do food chains begin with a producer? [1]

3. What is a predator? [1]
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4. In seaweed → limpet → crab → seagull, name the tertiary consumer. [1]
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5. Explain why predator numbers rise after prey numbers rise. [2]
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6. What is an apex predator? [1]
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7. What is trophic level 1? [1]
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8. Explain why a pyramid of biomass is almost always pyramid-shaped. [2]
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9. Biomass falls from 250 g/m² to 30 g/m². Calculate the efficiency of transfer. [2]
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10. Producers have 5000 g/m². If transfer is 10% at each level, calculate the biomass at trophic level 3. [2]
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11. Explain why food chains rarely have more than five trophic levels. [2]
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12. Give two ways biomass is lost between trophic levels. [2]
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13. Explain the role of decomposers in a food web. [2]
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14. Suggest why it is more efficient for humans to eat plants than meat.

[2]

4. Before you hand it in

Drawing arrows from the predator to the prey

Arrows point from the organism eaten to the organism that eats it (direction of transfer).

"Energy is lost, so biomass is destroyed."

Biomass is lost₂, water and urea (excreted) and or egested material.

Dividing the lower level by the higher level for efficiency

Efficiency = (biomass at the HIGHER level ÷ biomass at the LOWER level) × 100.