

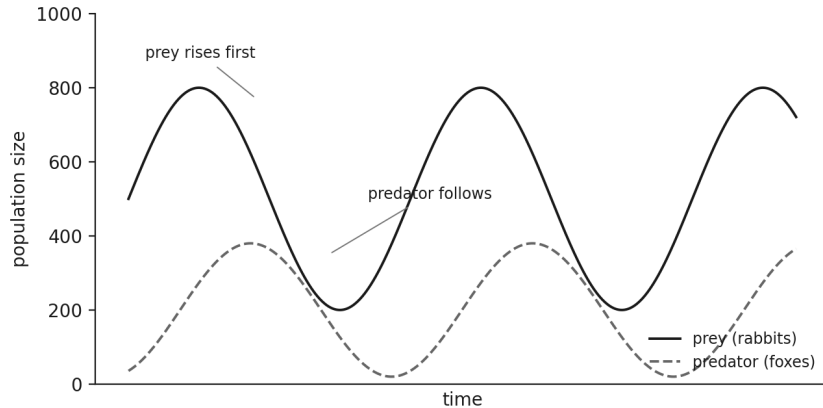
Exercise walk-through

7.1

Adaptations, interdependence and competition (4.7.1)

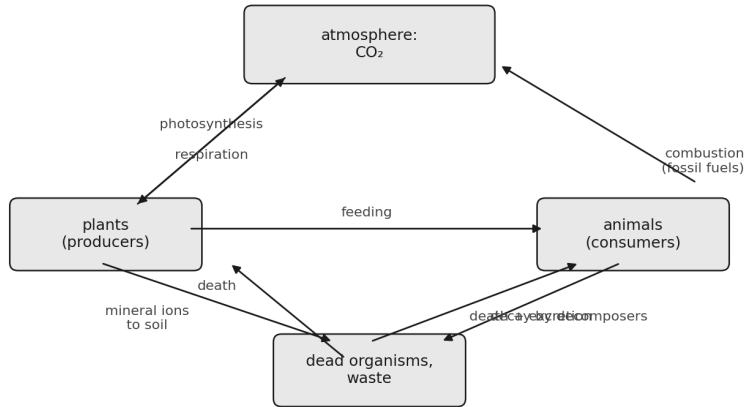
AQA · GCSE · Biology

Food chains and predator-prey cycles



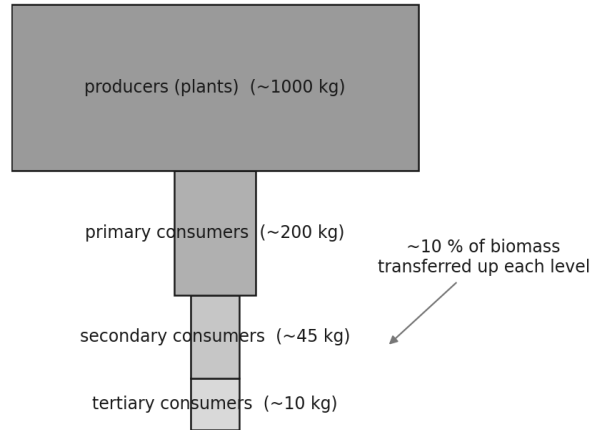
- Producer, primary, secondary, tertiary consumers.
- Prey rise first, predator follows, both oscillate.
- Photosynthetic organisms are Earth's biomass producers.

Carbon and water cycles



- Photosynthesis takes in CO₂; respiration and decay return it.
- Decomposers return mineral ions to the soil.
- Water — continuous evaporation and precipitation.

Trophic levels and the 10 percent rule



- Levels — producers, primary, secondary, tertiary; apex predators; decomposers.
- Only about 10 percent of biomass passes up each level.
- Lost — faeces, respiration, urine; producers store ~1 percent of sunlight.

Exercises 2.1·2.3

2.1 Define an ecosystem.

[2]

2.2 Give three things animals compete for.

[3]

2.3 Name the three types of adaptation with one example each.

[3]

Exercises 2.1·2.3

2.1 Define an ecosystem. [2]

2.1 The interaction of a community of living organisms (biotic); with the non-living (abiotic) parts of their environment.

2.2 Give three things animals compete for. [3]

2.2 Food, mates, territory.

2.3 Name the three types of adaptation with one example each. [3]

2.3 Structural – e.g. thick fur/blubber for cold; behavioural – e.g. migration to warmer climates; functional – e.g. venom production / low metabolic water loss.

Exercises 3.1·3.2

3.1 Explain how interdependence makes a community unstable when one species is removed. Use a named example chain. [4]

3.2 A new predator arrives in a woodland food web. Explain two effects on the community. [4]

Exercises 3.1·3.2

3.1 Explain how interdependence makes a community unstable when one species is removed. Use a named example chain. [4]

3.1 Each species depends on others for food, shelter, pollination or seed dispersal; e.g. remove bees → fewer plants are pollinated → plant numbers fall; the animals feeding on those plants lose their food source and also fall; so effects cascade through the community – interdependence.

3.2 A new predator arrives in a woodland food web. Explain two effects on the community. [4]

3.2 Any two: prey species numbers fall as the predator eats them; the prey's food plant increases as fewer are eaten, changing the whole web; the new predator competes with existing predators, whose numbers may fall; if a prey species drops too low to breed, it may disappear locally.

Exercise 3.3

3.3 Deep-sea vent bacteria live at high temperature and pressure with no light. Explain why they are called extremophiles, and suggest how they still obtain energy. [3]

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3.3 They live in conditions extreme for most life – very high temperature and pressure; 'extremophile' names an organism adapted to such environments; with no light there is no photosynthesis, so they obtain energy from chemical reactions – chemosynthesis around mineral-rich vents.