

Nova's Nature Trails: Mastering Food Chains

Learning objective: To identify producers, predators, and prey within a food chain and explain the transfer of energy through a habitat.

Read each question carefully and use your knowledge of habitats and life cycles to provide detailed scientific explanations. Remember to use the correct terminology.

Nova the barn owl has been observing the local meadow and the woodland edge. She has noticed that every living thing relies on another for survival. Using your scientific understanding of how energy moves through an ecosystem, complete the tasks below.

Word bank: Producer · Consumer · Herbivore · Carnivore · Omnivore · Predator · Prey · Energy transfer

1. Define the term 'producer' and explain why all food chains must start with one. Provide an example from a UK woodland habitat. (2 marks)

2. Compare and contrast a herbivore and a carnivore. How does their role in a food chain differ in terms of the energy they consume? (3 marks)

3. Imagine a food chain: Grass -> Rabbit -> Fox. If a disease caused the population of rabbits to decrease significantly, justify what might happen to the fox population and explain your reasoning. (3 marks)

4. Explain why the arrows in a food chain diagram point from the prey towards the predator rather than the other way around. (2 marks)

5. What might happen to the balance of an ecosystem if an apex predator (a predator at the very top of the food chain) were removed? Discuss the impact on the primary consumers. (3 marks)

Draw: Draw a complex food web for a pond habitat. Include at least one producer, two different types of consumers, and one apex predator. Use arrows to accurately show the direction of energy flow.



Extension challenge: Design a 'What-If' scenario. Choose a specific UK habitat and research an invasive species. Write a short report explaining how the introduction of this new species would disrupt existing food chains and threaten native biodiversity.