

Nova's Nocturnal Nature Trail: Constructing Food Chains

Learning objective: To construct and interpret food chains, identifying producers, predators, and prey within an ecosystem.

Nova the owl has been observing the woodland near the BookFlik library. Below is a list of woodland organisms. Use your knowledge of energy flow to sequence these into three distinct food chains. Remember: a food chain always starts with a producer that gains energy from the Sun. Use the arrows to show the direction of energy transfer (e.g., Plant → Herbivore).

Word bank: Producer · Consumer · Predator · Prey · Herbivore · Carnivore · Energy flow

1. Using the organisms: Grass, Field Mouse, Barn Owl, Oak Tree, Caterpillar, Blue Tit, Sparrowhawk, and Aphids, create three separate food chains. Explain why the arrows must always point away from the producer. (6 marks)

2. Justify your answer: If all the hedgehogs in a habitat were removed, what might happen to the population of slugs and the population of the plants they eat? Explain your reasoning. (4 marks)

3. Compare and contrast a producer and a consumer. What is the fundamental difference in how they obtain their energy? (3 marks)

4. If a new predator enters the food chain, does it gain all the energy from the animal it eats? Explain why energy is lost as it moves up the chain. (3 marks)

5. What might happen if the Sun stopped providing light to the producers? Describe the ripple effect this would have on the rest of the food chain. (3 marks)

6. Create a scenario where a human activity (such as building a new road) disrupts a local food chain. Describe which level of the chain is most affected and why. (4 marks)

Draw: Draw a complex 'food web' showing how these chains interconnect. Include at least two producers and five consumers. Label each organism as a producer, primary consumer, or secondary consumer.



Extension challenge: Research a 'top predator' in a UK habitat. Write a short paragraph justifying why the removal of a top predator can cause an entire ecosystem to become unbalanced.