

Investigating Energy Flows: Food Chains with Nova the Owl

Learning objective: To construct and interpret food chains, identifying producers, consumers, and the direction of energy flow.

Use this writing frame to describe a specific habitat and the food chain within it. Nova the Owl needs your help to map out how energy moves from the sun to the top predators.

Every living thing in a habitat relies on a complex web of energy that begins with the sun.

Word bank: producer · primary consumer · secondary consumer · tertiary consumer · energy transfer · habitat · photosynthesis · predator · prey · consequently · furthermore · subsequently · therefore

1. Identify your chosen habitat (e.g., woodland, pond, or garden). Describe the environment and name a producer that starts the food chain: The habitat I have chosen is... (2 marks)

2. Describe the primary consumer in your food chain. What does it eat? The primary consumer in this chain is the..., which feeds on... (2 marks)

3. Identify the secondary and tertiary consumers. How does the energy transfer from one organism to the next? The energy is transferred to the secondary consumer, which is..., and finally to the tertiary consumer, which is... (3 marks)

4. Explain why the arrows in a food chain always point towards the consumer: The arrows represent the flow of energy, therefore they point towards... (2 marks)

5. What might happen to the food chain if the producer were removed from the habitat? If the producer were to disappear, the primary consumer would... (3 marks)

Extension challenge: Nova the Owl asks: what would happen to your food chain if an apex predator was introduced that was not originally there? Write a short paragraph explaining the impact on the other animals.