

Habitats and Adaptations: The Natural World with Nova and Bea

Learning objective: To identify how animals and plants are adapted to suit their environment in different habitats and to explain the relationship between living things and their surroundings.

Read each question carefully. Use your scientific knowledge of habitats, life cycles, and environmental adaptations to provide detailed, reasoned answers.

Nova the barn owl and Bea the honeybee have been observing how different creatures survive in their unique homes. From the frozen Arctic to the lush tropical rainforest, every living thing has specific characteristics that help it thrive. Consider how physical features and behavioural patterns allow organisms to find food, shelter, and mates while avoiding threats.

Word bank: adaptation · environment · camouflage · nocturnal · ecosystem · predator · prey · insulation · hibernate · migration

1. Nova observes that many animals in cold habitats have thick layers of blubber or fur. Explain why these physical adaptations are essential for survival in sub-zero temperatures. (2 marks)

2. Bea notices that some insects use camouflage to blend in with leaves. Compare and contrast how this adaptation might benefit both the predator and the prey in different ways. (3 marks)

3. Some animals are nocturnal, meaning they are active at night. Justify why an animal might evolve to be nocturnal rather than diurnal (active during the day). (2 marks)

4. What might happen to a population of wildflowers in a meadow if a new, non-native species of plant was introduced that grew faster and blocked the sunlight? (3 marks)

5. A polar bear has large, wide paws. Explain the scientific benefit of this adaptation in relation to the bear's environment. (2 marks)

Draw: Design your own creature that lives in a fictional habitat where it rains marshmallows and the ground is made of bouncy sponge. Draw your creature and label three specific adaptations that help it survive in this environment.



Extension challenge: Choose a habitat (e.g., a desert, a deep ocean trench, or a temperate woodland). Write a short report detailing how climate change might affect the food chain within that habitat. Evaluate which species would be most vulnerable and justify your reasoning using evidence of their specific adaptations.