Nova’s Nocturnal Nature Trail: Classification Keys

Learning objective: To be able to use and construct simple classification keys to identify living things in the local environment.

Read the questions carefully. Use your knowledge of biological characteristics to navigate the keys and identify the mystery specimens that Nova the owl has spotted during her nightly observations.

Nova the owl is recording the creatures she sees in the woods. She uses a classification key to sort them into groups based on their observable features, such as whether they have legs, wings, or a backbone.

Word bank: Classification · Invertebrate · Vertebrate · Characteristic · Dichotomous · Habitat · Species · Identify

1. Nova finds a creature with six legs and an exoskeleton. Using your knowledge of classification, explain why this creature would be grouped as an invertebrate rather than a vertebrate. (2 marks)

2. Create a simple dichotomous key to distinguish between these four animals: a frog, a robin, a spider, and a worm. Start your key with the question: 'Does the animal have legs?' (3 marks)

3. Compare and contrast the physical characteristics of an amphibian and a mammal. How do these differences help us place them into separate branches on a classification key? (3 marks)

4. Justify why it is important for scientists to use a standardised classification system when discovering new species in different parts of the world. (2 marks)

5. What might happen to the accuracy of a classification key if a researcher only chooses to look at the color of an animal instead of its structural characteristics? Explain your reasoning. (3 marks)

Draw: Draw a scientific diagram of a mystery creature you have invented. Then, write three 'Yes/No' questions that would allow a classmate to identify your creature using a classification key.

Extension challenge: Imagine you are a scientist who has just discovered a new species in a remote rainforest. Describe its unique features and design a classification key that would help other scientists correctly identify it as either a mammal, bird, reptile, amphibian, or insect.