

Nova's Nature Classification Challenge

Learning objective: To identify, name, and classify living things into broad groups according to common observable characteristics and based on similarities and differences.

Follow the prompts below to construct your own scientific classification key. Use the word bank to help you use formal, precise language. When creating your key, ensure your questions have 'yes' or 'no' answers that lead to a specific group or species.

To understand the vast diversity of life on our planet, scientists like Nova the owl use classification keys to systematically identify organisms based on their unique, observable features.

Word bank: dichotomous · characteristic · classification · invertebrate · vertebrate · organism · alternatively · subsequently · distinguishable · whereas · consequently

1. Introduction: State the purpose of your classification key. Why is it essential for scientists to organise living things into groups? Start with: 'The primary objective of this classification key is to...' (2 marks)

2. Scientific Criteria: Explain the first 'yes or no' question you have chosen for your key. Justify why this is a useful starting point for separating your chosen organisms. Start with: 'The initial question in my key distinguishes between... because...' (3 marks)

3. Comparative Analysis: Compare two of the organisms in your key. Explain the specific physical differences that allow them to be classified into separate branches. Start with: 'When comparing [Organism A] and [Organism B], it is evident that...' (3 marks)

4. Evaluation: What might happen to your key if you discovered a new species that did not fit into your existing 'yes' or 'no' categories? Explain how you would adapt your key. Start with: 'If I encountered an organism with an unusual characteristic, I would modify my key by...' (4 marks)

5. Refining the System: Justify your decision to use specific observable features (like fur, feathers, or shell) rather than internal features. Start with: 'I chose to focus on external characteristics because...' (3 marks)

6. Conclusion: Summarise the limitations of using a simple dichotomous key. Can a key ever be truly perfect? Start with: 'While classification keys are effective tools, they have limitations such as...' (2 marks)

Extension challenge: Design a 'Branching Key' flow chart on a separate sheet of paper. Your key must classify at least eight different organisms. Once finished, test your key by showing it to a partner to see if they can identify an organism correctly using only your questions. Write a short paragraph evaluating whether your partner found your questions ambiguous or clear.