Year 6 Science Assessment: Classification of Living Things

Learning objective: To demonstrate understanding of how living things are classified into broad groups according to observable characteristics and based on similarities and differences, including microorganisms, plants, and animals.

Read each question carefully. Use your scientific knowledge to complete the classification tasks. Ensure your answers are clear and written in full sentences where requested.

Nova the barn owl has been observing the wildlife in the local woodland. She has noticed that to study the natural world effectively, scientists use classification keys to sort living things into groups based on their specific features. By asking 'yes' or 'no' questions about physical characteristics, such as 'Does it have a backbone?' or 'Does it have feathers?', scientists can identify unknown organisms.

Word bank: Vertebrate · Invertebrate · Microorganism · Classification · Species · Characteristic · Key · Flowchart

1. Define the term 'classification' in your own words and explain why it is useful for scientists. (2 marks)

2. Nova finds an animal with a backbone and fur. Using your knowledge of animal groups, name the class this animal belongs to and list one other characteristic of this group. (2 marks)

3. Bea the honeybee is studying insects. Explain the difference between a vertebrate and an invertebrate. Give one example of each. (3 marks)

4. Look at the following list: Bacteria, Yeast, Fern, Moss, Beetle, Human. Sort these six items into two categories: 'Microorganisms' and 'Other Living Things'. (4 marks)

5. Create a simple branching classification key that could be used to sort the following three animals: A goldfish, a sparrow, and a dog. Your key must include at least two 'yes/no' questions. (4 marks)

6. Design a classification key for a set of five household objects (e.g., a metal spoon, a wooden pencil, a plastic cup, a cotton sock, and a glass marble). Explain your choice of criteria (the questions you chose) and why they are effective for sorting these items. (5 marks)

7. If a scientist discovers a new organism that does not fit into any known classification group, what should they do next to ensure it is classified correctly? (5 marks)

Draw: Draw a diagram of a simple branching key that sorts three different types of leaves based on their shape and edge (e.g., jagged vs. smooth).

Extension challenge: Total: /25