

Kit's Database Architect Challenge

Learning objective: To understand how to design, organise, and query a flat-file database using records, fields, and specific data types.

Kit the fox needs your help to organise his woodland library! A database is a structured collection of data. Use the template below to design your own database. First, choose a topic (like your own book collection, school stationery, or garden wildlife). Define your fields (the categories of information) and then create three records (the entries for individual items). Ensure your data types—such as numerical values for price or text for titles—are consistent.

Word bank: Database · Record · Field · Data type · Query · Attribute · Categorise · Filter

1. Database Design: Define your database topic and list four 'fields' you will use to categorise each item (e.g., Name, Cost, Quantity, Date). (2 marks)

2. Record Entry 1: Fill in the data for your first record based on the fields you chose above. (2 marks)

3. Record Entry 2: Fill in the data for your second record. Ensure the format matches the first record exactly. (2 marks)

4. Query Logic: If you wanted to find every item in your database that costs more than £5.00, explain the steps you would take to filter your data. (3 marks)

5. Evaluation: Why is it important to use consistent data types (e.g., ensuring a 'Price' field only contains numbers and not words) when building a database? (3 marks)

6. Critical Thinking: Compare and contrast a physical paper list with a digital database. Justify why a digital database is more efficient for managing large amounts of information. (4 marks)

Extension challenge: Imagine you are building a database for the entire school library. What might happen if two different people used different formats for the same field (e.g., one person writes '£5.00' and another writes 'five pounds')? Write a short proposal explaining how you would create a 'Data Entry Protocol' to ensure accuracy.