

Kit's Computing Challenge: Database Detectives

Learning objective: To design and structure a flat-file database, understanding how to use fields, records, and criteria to organise complex information.

Kit the fox is organising a community library of donated books. He needs to create a digital database. Use the table structure provided below to organise the following data points into a logical format. Then, answer the analytical questions to help Kit query his database effectively.

Word bank: Field · Record · Database · Query · Criteria · Attribute · Sort · Filter

1. Kit has five books: 'The Starry Night' (£5.50, Fiction), 'History of Bridges' (£8.25, Non-Fiction), 'Cooking for One' (£4.99, Non-Fiction), 'Lost in Space' (£6.00, Fiction), and 'Garden Insects' (£7.50, Non-Fiction). Create a table with these headers: Title, Category, Price. List all items as records. (3 marks)

2. Explain why it is more efficient to use a database to store this information rather than keeping it in a handwritten list in a notebook. (2 marks)

3. If Kit wants to find all books that cost more than £6.00, what 'criteria' would he need to set for his search? (2 marks)

4. Compare and contrast the function of a 'sort' command versus a 'filter' command. When would you use each one? (3 marks)

5. Justify your answer: If we added a new field called 'Availability', how would this change the way a user interacts with the database? (2 marks)

6. What might happen if we entered the price of 'The Starry Night' as 'five pounds fifty' instead of '5.50'? Discuss the importance of data consistency. (2 marks)

Draw: Draw a diagram representing a simple database table. Show how three 'records' are stored in rows and three 'fields' are stored in columns, labelling each part clearly.



Extension challenge: Design a new database for a school project. Choose a theme (e.g., a collection of minerals, a list of endangered animals, or a record of historical inventions). Define at least four specific fields you would need to collect and explain why those specific fields are necessary for someone conducting research.