Data Detectives: Organising Information

1. A field is a single category of information within a record. An example for the library would be 'Author' or 'Publication Date'. (2 marks)

Working: Definition of field and one relevant example from the context.

1 mark for definition, 1 mark for a valid example.

2. A unique ID ensures each book is distinct. Titles can be identical (e.g., different editions or reprints), which would cause confusion in a search. (3 marks)

Look for: The concept of uniqueness to avoid errors caused by duplicate titles.

Good: It helps because two books might have the same name.

Better: It is important because different books might share the same title, so the ID makes sure you find the exact one you need.

Best: A unique ID acts as a primary key to prevent errors. Since different books can have identical titles, the ID ensures the database retrieves the specific record requested without ambiguity.

What moves an answer up: Moving from a simple observation to explaining the technical function of a primary key.

3. This is a query. A query is a request to find specific data that meets certain criteria, whereas sorting just changes the order of existing data. (3 marks)

Look for: Identification as a query and the distinction between searching and ordering.

Good: It is a query because he is searching for specific books.

Better: It is a query because Kit is asking the database to find information that matches his specific rules, like 'badgers' and 'after 2020'.

Best: This is a query. A query is used to extract specific records that meet defined criteria, while sorting would only reorder the entire list without hiding any books.

What moves an answer up: Adding the definition of a query and contrasting it with sorting.

4. 3,300 books are hidden. (3 marks)

Working: 4,500 total - 1,200 fiction = 3,300 hidden.

1 mark for correct calculation, 2 marks for showing the subtraction method.

5. Sorting changes the order of the data (e.g., A-Z by title). Filtering hides data that doesn't match your criteria (e.g., showing only books about foxes). (4 marks)

Look for: Clear distinction: sorting = order; filtering = visibility/selection.

Good: Sorting puts things in order, but filtering hides things you don't want to see.

Better: Sorting changes the order of the list, like putting books in alphabetical order. Filtering hides records that don't match, like only showing books about badgers.

Best: Sorting reorders the existing data, such as arranging books by publication date. Filtering restricts the view to only show records that meet specific criteria, effectively hiding the rest.

What moves an answer up: Using precise terminology like 'reorders' and 'restricts' to show understanding.

6. 1. Vegetable Name (to identify the plant), 2. Planting Date (to track age), 3. Height (to track growth), 4. Water Amount (to monitor care), 5. Harvest Date (to know when to pick). (5 marks)

Working: List of 5 fields with a logical reason for each.

1 mark per field/reason pair.

7. Irrelevant results happen if the search term is too broad or has multiple meanings. To improve it, use more specific keywords or combine terms (e.g., 'badger habitat' instead of just 'badger'). (5 marks)

Look for: Understanding of 'broad' terms and the use of specific keywords/Boolean logic.

Good: It might give too many results. You should use more specific words.

Better: It provides irrelevant results if the search term is too general. You can improve it by adding more specific words to your search query.

Best: A search might be irrelevant if the term is ambiguous or too broad. A user can improve accuracy by using more specific keywords or combining terms to narrow the search parameters.

What moves an answer up: Using academic vocabulary like 'ambiguous' and 'parameters'.

What a secure answer looks like

A secure answer demonstrates that the student understands that databases are tools for managing large amounts of data through specific, logical rules. They should be able to distinguish between the structure of the data (fields/records) and the actions performed on it (sorting/querying).

If your child is stuck

Ask your child to imagine a library where all the books are in a giant pile on the floor. How would they find a specific book? Then, explain that a database is just a very fast, digital way of doing that sorting and searching.

Common mistakes to watch for

Students often confuse 'sorting' (changing order) with 'filtering' (hiding items). They also sometimes struggle to understand that a 'field' is the category name, not the specific data inside it.