Digital Detectives: Data Handling Challenge

1. The 'field' is the category (e.g., Vegetable Name or Weight). The 'record' is the specific entry for one vegetable (e.g., Carrots: 1200g). (2 marks)

Working: Fields are the column headers; records are the individual rows of data.

1 mark for identifying field as the category/header, 1 mark for identifying record as the individual data entry.

2. 1500g (3 marks)

Working: Total weight: 1200 + 3500 + 800 + 500 = 6000g. Mean: 6000 ÷ 4 = 1500g.

1 mark for correct total, 1 mark for correct division, 1 mark for final answer with units.

3. A bar chart would be most effective. (3 marks)

Look for: Identification of a bar chart and a reason relating to comparing discrete categories.

Good: A bar chart because it shows the different weights clearly.

Better: A bar chart is best because it allows you to easily compare the weight of each vegetable side-by-side.

Best: A bar chart is the most effective choice because the data is categorical, making it easy to compare the height of the bars to see which vegetable is the heaviest.

What moves an answer up: Moving from good to best involves explaining the relationship between the data type (categorical) and the visual representation.

4. The median changes from 1000g to 800g. (4 marks)

Working: Original data: 500, 800, 1200, 3500. Median is (800+1200)/2 = 1000. New data: 250, 500, 800, 1200, 3500. The middle value is 800.

1 mark for ordering the data, 1 mark for identifying the new median, 1 mark for showing the calculation/logic, 1 mark for correct final value.

5. £6.10 (3 marks)

Working: Potatoes: 3 x £1.50 = £4.50. Carrots: 2 x £0.80 = £1.60. Total: £4.50 + £1.60 = £6.10.

1 mark for potato calculation, 1 mark for carrot calculation, 1 mark for final total.

6. Plan: (a) Questions: Which vegetable do you like best? How often do you eat vegetables? Do you prefer raw or cooked vegetables? (b) Store in a spreadsheet. (c) Ensure accuracy by limiting responses to one per person and checking for typos. (10 marks)

Look for: A structured plan covering all three parts (questions, storage, accuracy).

Good: I would ask what they like, put it in a computer table, and check the answers are real.

Better: I would ask three questions about vegetable preferences, store the data in a spreadsheet, and make sure each child only votes once to keep it accurate.

Best: I would design a digital form with three questions: 'Which vegetable is your favourite?', 'How many portions do you eat daily?', and 'Do you prefer home-grown?'. I would store this in a spreadsheet and ensure accuracy by using drop-down menus to prevent spelling errors and limiting entries to one per pupil.

What moves an answer up: Moving from good to best involves adding specific technical detail and explaining the 'how' of data integrity.

What a secure answer looks like

A secure answer demonstrates an understanding of data sets, the ability to perform multi-step arithmetic, and the logic required for digital data management.

If your child is stuck

Ask the child to write the numbers in order first when finding the median, and remind them that a 'field' is like a column header in a table.

Common mistakes to watch for

Confusing mean and median; forgetting to include units (g or £) in the final answers.