

Max's Market Research: Statistics and Data Analysis

Learning objective: To interpret, construct, and solve problems using line graphs, tables, and timetables.

Max the monkey is helping the local community gather data about their favourite fruit stall sales. Use this template to record your findings, interpret the data, and justify your conclusions. Ensure you use precise mathematical vocabulary when explaining your reasoning.

Word bank: frequency · discrete data · continuous data · axis · interval · scale · trend · correlation · interpret

1. Data Collection Plan: Describe the discrete data you are collecting and justify why a tally chart is the most effective method for this initial stage. (2 marks)

2. Graphical Representation: If you were to plot the price of fruit (£) against the quantity sold over a week, explain why a line graph is more appropriate than a bar chart. (3 marks)

3. Interpreting Trends: Look at a set of sales data. Explain why there might be a significant fluctuation in the price or quantity sold on a specific day. (3 marks)

4. Comparative Analysis: Compare and contrast the data collected from two different fruit stalls. What might happen if one stall increased their prices by 20p? (3 marks)

5. Calculating Averages: Using your data, explain the process of calculating the mean average price of a piece of fruit. Why might the range be more useful than the mean in this scenario? (4 marks)

6. Evaluating Reliability: Justify your answer: Is the sample size large enough to make a generalisation about the shopping habits of the whole town? (3 marks)

Extension challenge: Design an original data investigation task for your peers. Create a scenario involving a budget of £50.00 and ask them to construct a table showing how they would spend the money, then calculate the total and the mean spend per category.