

Year 5 Statistics: Data Detective Challenge

Learning objective: To interpret and present data using line graphs, tables, and two-way tables, and to solve problems using information presented in these formats.

Read each question carefully. Show your working out clearly, as marks may be awarded for the method even if the final answer is incorrect. Use a ruler for any drawing tasks.

Max the monkey has been tracking the pocket money earned by his friends over a five-day school week. He recorded the total amounts in pounds (£) in the following table:

Monday: £4.50 | Tuesday: £3.00 | Wednesday: £6.50 | Thursday: £5.00 | Friday: £8.00

Word bank: Line graph · Two-way table · Data · Frequency · Interval · Trend · Axis · Scale

1. Using the data from Max's table, calculate the total amount of money earned by the group across the entire week. Show your calculation. (2 marks)

2. Max wants to plot this data on a line graph. What is the most appropriate range for the vertical axis (y-axis) to ensure all data points fit clearly, and why should he choose this range? (2 marks)

3. Construct a two-way table to categorise the following: Pip the caterpillar earned £2.00 on Monday and £3.00 on Tuesday. Nova the owl earned £1.50 on Monday and £4.00 on Tuesday. Include a 'Total' row and column. (4 marks)

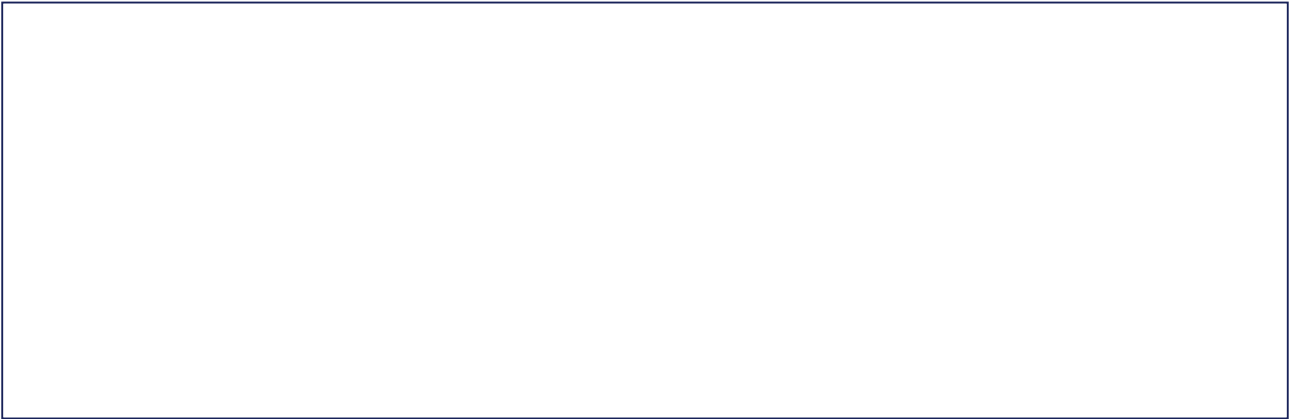
4. Explain why a line graph is a more effective method than a pictogram for representing the change in earnings over the course of the week. Justify your answer using the concept of 'trends'. (3 marks)

5. Looking at the data in the passage, describe the trend from Wednesday to Friday. What might happen to the total if this trend continued into the following Monday? (3 marks)

6. Max claims that the mean average daily earning for the week is exactly £5.40. Is he correct? Prove your answer by showing your mathematical steps. (3 marks)

7. Extended Writing Task: Write a short report (approx. 100 words) as if you are Max. Analyse the data from the passage. Identify the day with the highest earnings and the day with the lowest. Propose a theory as to why Friday's earnings were significantly higher than Tuesday's, and suggest how the friends could adjust their activities to make their daily income more consistent next week. (8 marks)

Draw: Draw a clear, accurately labelled line graph using the data from the passage. Ensure the x-axis represents the days of the week and the y-axis represents the amount in £.



Extension challenge: Total: /25. Consider this: If the friends decided to combine all their money to buy a gift costing £30.00, how many more days would they need to work at the average daily rate calculated in Question 6? Justify your reasoning.