

Data Detectives: Analysing Information with Kit the Fox

Learning objective: To collect, organise, and interpret data using frequency tables and bar charts, and to evaluate how data representation affects our understanding of information.

Read each question carefully. Use your knowledge of data handling and logical reasoning to solve these problems. Ensure you provide justifications for your analytical answers.

Kit the fox is organising a digital database of the fruits gathered in the forest to ensure the community has enough food for the winter. He has recorded the following quantities: 45 apples, 32 pears, 18 plums, and 55 blackberries.

Word bank: Frequency · Data set · Categorical · Discrete · Variable · Scale · Trend · Axis

1. Kit needs to draw a bar chart to represent his data. If he chooses a scale where one square represents 5 units, how many squares high should the bar for blackberries be? Explain how you calculated this. (2 marks)

2. Compare the frequency of the most popular fruit to the least popular fruit. What is the difference in quantity, and why might this data be useful for Kit's planning? (3 marks)

3. If Kit discovers 12 more plums, justify how this new data would change the 'trend' of his current database. (2 marks)

4. What might happen if Kit decides to group 'apples' and 'pears' together as 'tree fruits' in his chart? How does changing the categories affect the level of detail available to the reader? (3 marks)

5. Kit wants to sell the excess fruit at the market for £0.25 per apple and £0.30 per pear. Calculate the total potential earnings if he sells all 45 apples and 32 pears. Show your working. (3 marks)

Draw: Sketch a bar chart using Kit's data (45 apples, 32 pears, 18 plums, 55 blackberries). Ensure your axes are labelled correctly and include a title for your chart.



Extension challenge: Design a survey question you could ask your classmates to collect a new data set. Explain why you chose your specific categories and predict what the most frequent response might be. How would you present this data to make it as clear as possible for a younger student?