

Data Detectives: Analysing Information with Kit

Learning objective: To collect, organize, and interpret data using tally charts and pictograms, and to justify conclusions drawn from data sets.

Kit the fox is organising a digital library. Use your data handling skills to help Kit sort information, identify patterns, and explain your reasoning. Show your working clearly.

Word bank: tally chart · pictogram · data set · frequency · axis · key · categorize · interpret

1. Kit surveyed 20 friends about their favorite book genres. 8 chose Adventure, 5 chose Mystery, 4 chose Non-Fiction, and 3 chose Poetry. Create a tally chart to represent this data. How many more children chose Adventure than Poetry? (3 marks)

2. If you were to represent the data above in a pictogram where one symbol represents 2 children, explain how you would draw the symbol for the 'Mystery' category. Why is this more complex than representing an even number? (3 marks)

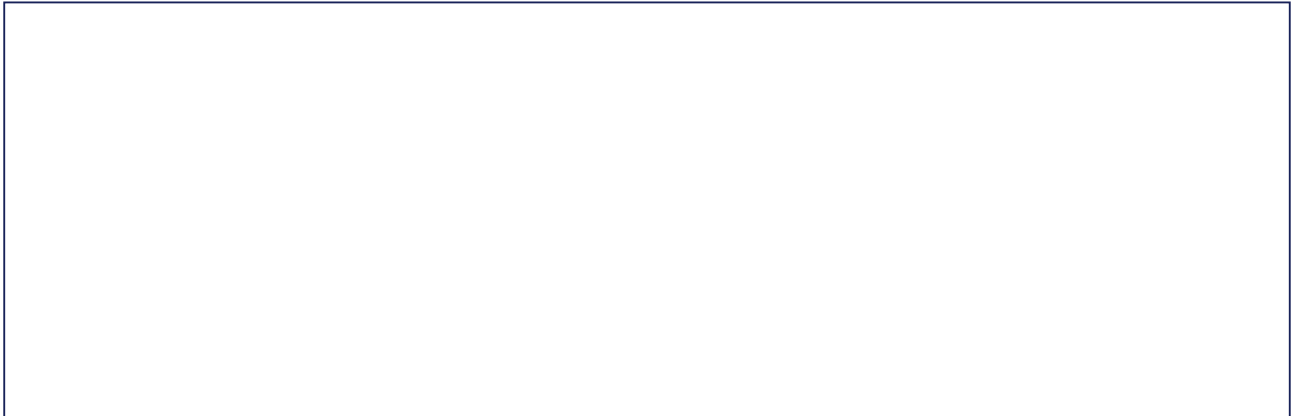
3. Kit recorded the number of minutes spent reading each day: Mon: 20, Tue: 35, Wed: 20, Thu: 45, Fri: 30. Calculate the total time spent reading and the range of the data. Justify why the range is a useful piece of information for Kit. (4 marks)

4. Compare and contrast a bar chart and a pictogram. Under what circumstances would a bar chart be a more effective way to display large data sets compared to a pictogram? (3 marks)

5. Kit wants to add a new category to the survey. Suggest a new data category and explain how collecting this data might help Kit improve the digital library organisation. (2 marks)

6. What might happen if Kit accidentally entered a frequency of 100 instead of 10 for one of the categories? How would this error impact the interpretation of the entire data set? (3 marks)

Draw: Draw a pictogram showing the number of books Kit has collected: 6 mystery books, 10 adventure books, and 4 poetry books. Remember to include a clear key where one symbol equals two books.



Extension challenge: Design a survey question to ask your classmates. Once you have collected your data, construct a frequency table and a bar chart. Write a paragraph justifying which type of graph best represents your findings and why.