Year 9 · Statistics: Reading the Story in Data

Name: _____ Date: _____

This sheet helps you get to know a data set by finding its five-point summary and interquartile range, and by spotting what kind of statistical question is being asked. Take your time ordering the numbers, that's where most marks are won or lost!

Warm-up

1. Order this data set from smallest to largest, then write down the minimum and maximum: 12, 7, 15, 9, 20, 4.

2. Find the median of: 3, 8, 5, 10, 6.

3. A survey records each student's eye colour and their height in centimetres. Which variable is categorical and which is numerical?

4. Mia counts the birds in her own backyard in Avondale. Wiremu uses bird numbers published on the StatsNZ website. Who is collecting primary data and who is using secondary data?

Practice

5. For the data set 4, 6, 7, 9, 11, 12, 15, 18, 20, find the five-point summary and the interquartile range.

6. These are the heights (cm) of 10 students: 152, 155, 158, 160, 162, 165, 168, 170, 172, 180. Find the five-point summary and the IQR.

7. Label each question as a summary, comparison, relationship, or time-series investigation. (a) What is the typical number of pets owned by students at Avondale Intermediate? (b) Do Year 9 boys spend more time on screens than Year 9 girls? (c) Is there a connection between hours studied and test score? (d) How has the price of a flat white in Avondale changed each year from 2020 to 2025?

8. Aroha plans an observational study at her school. For each student she records their favourite sport and how many hours per week they exercise. (a) Name one categorical and one numerical variable. (b) Is this primary or secondary data? (c) Write a good summary statistical question she could investigate.

9. The Avondale netball team scored these goals across 11 games: 18, 22, 15, 30, 25, 20, 28, 19, 24, 21, 26. Find the five-point summary and the IQR of the goals scored.

10. Eight students recorded how many minutes it took them to get to school: 5, 12, 8, 20, 15, 10, 25, 18. Find the five-point summary and the IQR, then state what the IQR tells you.

Challenge

11. Screen-time (hours per week) was recorded for two groups. Year 9: 2, 3, 3, 4, 5, 6, 7, 8. Year 10: 1, 3, 5, 6, 7, 8, 9, 11. Find the five-point summary and IQR for each group, then compare the two groups.

12. Waiting times (minutes) at a medical centre were: 5, 7, 8, 9, 10, 11, 12, 45. Find the five-point summary, the range, and the IQR. Explain which measure of spread better describes most patients' experience, and why.