Year 6 · Statistics: Graphing Data Over Time

Name: _____ Date: _____

Hi there! This sheet is all about time-series (line) graphs, the kind that show how something changes over time. You'll read them, build them, and decide when they're the best graph to use. Have your ruler and pencil ready!

Warm-up

1. On a time-series graph, which axis (the horizontal one or the vertical one) always shows the time?

2. A line graph shows the temperature in Avondale was 13°C at 8am and 19°C at 11am. By how many degrees did it rise?

3. You want to show how a kūmara plant's height changed each week for 8 weeks. Is a time-series graph a good choice? Why?

4. On a time-series graph the points for Monday to Friday are joined with lines. If the line goes downward from one day to the next, what does that tell you?

Practice

5. Mia recorded the number of library books borrowed at Avondale School each day: Monday 20, Tuesday 25, Wednesday 30, Thursday 22, Friday 35. Describe how you would set up a time-series graph for this data (what goes on each axis and a sensible scale).

6. Using Mia's data above, between which two days did the number of books borrowed drop the most, and by how many?

7. Rangi measured the water level in his rain tank on the 1st of each month (in litres): Jan 400, Feb 350, Mar 300, Apr 380, May 500. On his time-series graph, describe the overall trend from January to May.

8. A café owner has two sets of data: (a) how her daily coffee sales changed over one week, and (b) the favourite ice-cream flavours of 60 customers. Which set suits a time-series graph and which suits a bar graph? Explain.

9. Here are the midday temperatures for a week in Auckland: Mon 18°C, Tue 21°C, Wed 24°C, Thu 24°C, Fri 20°C, Sat 17°C, Sun 19°C. What was the highest temperature, and on how many days was the temperature 20°C or above?

10. Leah plots a point on her time-series graph at the position '3pm, 12 people'. Explain in words exactly what this point means.

Challenge

11. Two shops record their afternoon customers on the same time-series graph. Shop A: 1pm 10, 2pm 15, 3pm 25, 4pm 20. Shop B: 1pm 20, 2pm 18, 3pm 15, 4pm 22. At what time did the two shops have the same number of customers, and how would you show both shops clearly on one graph?

12. Sam has yearly rainfall totals for Auckland for 10 years and wants to see if rainfall is generally increasing or decreasing over time. He also has to present the average rainfall of 5 different NZ cities for one year. Which graph best suits each task, and for the 10–year data explain what a 'trend line' would add.