

Foundation GCSE: Stem and Leaf Diagrams

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (10). Working out should be shown where appropriate.

1. A local weather station records the daily maximum temperature (in °C) for a week. Using the key $1 \mid 5 = 15^{\circ}\text{C}$, what temperature is represented by a stem of 2 and a leaf of 4?

2. A runner logs their training times (in minutes) over several sessions. Find the median time from the stem row:

$$3 \mid 8 \ 12 \ 15 \ 19$$

(Key: $3 \mid 8 = 38$ mins).

3. A delivery driver records parcel weights (in kg) over two weeks:

$$\begin{array}{c|c} 1 & 2 \ 5 \ 9 \\ 2 & 0 \ 3 \ 8 \ 8 \\ 3 & 1 \ 4 \ 7 \end{array}$$

Calculate the range of the parcel weights using the key $1 \mid 2 = 1.2$ kg (interpret stems as units and leaves as tenths, so $1 \mid 2 = 1.2$).

4. A garden centre records the heights of sunflower seedlings (in cm). Order the unordered leaves in the following stem row:

$$4 \mid 7 \ 2 \ 9 \ 1 \ 4 \ 0$$

Key: $4 \mid 0 = 40$ cm.

5. A bakery tracks daily sales of artisan bread loaves. Find the minimum daily sales figure from a diagram with stems 1, 2, 3, 4 and respective first leaves 4, 0, 5, 2, given key $1 \mid 4 = 14$ loaves.

6. The stem and leaf diagram below shows the weekly working hours of part-time employees. State the median number of hours worked:

$$\begin{array}{c|c} 2 & 3 \ 5 \ 8 \\ 3 & 1 \ 4 \ 4 \ 7 \\ 4 & 0 \ 2 \ 6 \end{array}$$

Key: $2 \mid 3 = 23$ hours.

7. A fitness tracker records resting heart rates from 50 to 89 bpm. State how many stem rows are required to construct this diagram.

8. Five local petrol stations record the price of unleaded fuel (in pence per litre). Given the stem row $14 \mid 1 \ 3 \ 5 \ 5 \ 8$ (representing 141p, 143p, etc.), calculate the mean fuel price using:

$$\frac{141 + 143 + 145 + 145 + 148}{5}$$

9. A cafe records the waiting times (in seconds) of 14 customers during lunch rush. Use the stem and leaf diagram below to find the median waiting time by averaging the 7th and 8th positions:

$$\begin{array}{c|c} 6 & 5 \ 8 \\ 7 & 1 \ 3 \ 6 \ 8 \\ 8 & 0 \ 2 \ 4 \ 7 \ 9 \\ 9 & 1 \ 5 \ 6 \end{array}$$

Key: $6 \mid 5 = 65$ seconds.

10. Two local coffee shops record the daily number of hot drinks sold over ten days. Compare the businesses by finding the median daily sales for Shop A (left) and Shop B (right):

Shop A	Stem	Shop B
8 4 1	1	3 5
9 5 2 0	2	1 4 7 8
6 3	3	0 2 5 9

Key: $1 \mid 3 = 13$ drinks (for both sides).

$$\left(\frac{722}{5}\right)$$