

# GCSE Maths: Stem-and-leaf diagrams (Foundation): worksheet

GCSE Maths - Statistics - Foundation - Lesson 24.9

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_

12 questions. Write your answers in the spaces. Answers and step-by-step help are free at [websink.site/gcse/maths/ch24-statistics/foundation/stem-and-leaf-diagrams/](https://websink.site/gcse/maths/ch24-statistics/foundation/stem-and-leaf-diagrams/)

## Exercise 24I Stem-and-leaf diagrams Non-calculator

- 1** The ages of 12 people at a party are: 23, 31, 19, 42, 35, 27, 31, 45, 22, 38, 29, 51. Draw an ordered stem-and-leaf diagram.

Answer: \_\_\_\_\_

- 2** The heights, in cm, of 15 students are: 152, 147, 161, 158, 143, 166, 150, 155, 149, 163, 157, 171, 160, 154, 148. Draw an ordered stem-and-leaf diagram with the stems 14, 15, 16 and 17.

Answer: \_\_\_\_\_

- 3** The stem-and-leaf diagram shows the number of points scored by 15 players in a season.

| Stem     | Leaf      |
|----------|-----------|
| <b>1</b> | 2 5 7     |
| <b>2</b> | 1 3 3 6 8 |
| <b>3</b> | 0 1 4 5 8 |
| <b>4</b> | 1 5       |

Key: 2 | 3 means 23 points

- (a) How many values are more than 30? (b) Find the mode. (c) Find the median. (d) Find the range.

- (a)** Values more than 30

Answer: \_\_\_\_\_

- (b)** Mode

Answer: \_\_\_\_\_

- (c)** Median

Answer: \_\_\_\_\_

- (d)** Range

Answer: \_\_\_\_\_

- 4** The masses, in kg, of nine parcels are shown.

| Stem     | Leaf    |
|----------|---------|
| <b>1</b> | 2 5 8   |
| <b>2</b> | 1 3 3 6 |
| <b>3</b> | 0 4     |

Key: 1 | 2 means 1.2 kg

Work out (a) the median, (b) the mode and (c) the range of the masses.

(a) Median  
Answer: .....

(b) Mode  
Answer: .....

(c) Range  
Answer: .....

5 The back-to-back diagram shows the scores of nine boys and ten girls.

| Boys    | Stem | Girls     |
|---------|------|-----------|
|         | 2    | 8         |
| 8 5 2   | 3    | 1 3 6 8 9 |
| 7 5 4 1 | 4    | 2 3 6 9   |
| 5 2     | 5    |           |

Key: for boys 4 | 1 means 41; for girls 1 | 3 means 31

(a) Find the median score for each group. (b) Find the range for each group. (c) Compare the scores.

(a) Medians  
Answer: .....

(b) Ranges  
Answer: .....

(c) Comparison  
Answer: .....

6 Look at this stem-and-leaf diagram for the ages of six people: 2 | 8 3 1, 3 | 5 2, 4 | 9. Give two things that are wrong with it.

Answer: .....

7 Work out the mean of the 12 ages in the first question of this exercise: 23, 31, 19, 42, 35, 27, 31, 45, 22, 38, 29, 51. Give your answer to 1 decimal place.

Answer: .....

8 Write down the original list of data shown by this stem-and-leaf diagram.

| Stem | Leaf    |
|------|---------|
| 6    | 1 4 8   |
| 7    | 0 3 3 9 |
| 8    | 5       |

Key: 6 | 1 means 61 cm

Answer: .....

9 Maya says: "A stem-and-leaf diagram is better than a grouped frequency table if you want the exact median." Is she right? Explain.

Answer: .....

**10** A stem-and-leaf diagram for 11 values is shown.

| Stem | Leaf    |
|------|---------|
| 1    | 0 2 5 8 |
| 2    | 0 1 6 9 |
| 3    | 3 6     |
| 4    | 4       |

Key: 1 | 2 means 12

Show that the mean is greater than the median.

Answer: .....

**11** The scores of the students in two groups are: Group X: 22, 27, 31, 35, 38, 44, 46. Group Y: 25, 29, 32, 33, 40, 41, 48, 50. Draw a back-to-back stem-and-leaf diagram with Group X on the left.

Answer: .....

**12** The stem-and-leaf diagram shows the lengths of eight snakes, in metres.

| Stem | Leaf    |
|------|---------|
| 1    | 2 8     |
| 2    | 1 3 6 9 |
| 3    | 4 5     |

Key: 1 | 2 means 1.2 m

Show that the median length is 2.45 m.

Answer: .....