Stem-and-leaf plots: worked examples

Name: _____ Class: _____ Date: _____

A stem-and-leaf plot splits each numerical value into a stem and a final digit called a leaf. With a clear key, it shows the distribution while preserving the individual observations. Sort the leaves and keep repeated values.

Plot eleven quiz scores

Stem	Leaves
1	2 4 4 8
2	1 3 4 7
3	1 3 6

Key: 1 | 2 = 12 points

Use these fictional scores: 12, 14, 14, 18, 21, 23, 24, 27, 31, 33, 36. The leaf unit is 1.

Read decimal values with a different key

Stem	Leaves
1	2 4 4 8
2	1 3

Key: 1 | 2 = 1.2 minutes

Six fictional task times are 1.2, 1.4, 1.4, 1.8, 2.1 and 2.3 minutes. Here the leaf unit is 0.1 minute.

Original fictional data. Full explanations and copyable datasets: chartmaker.tools/lessons/stem-and-leaf-plots

Five practice questions

Student page 2 of 2 | Use the examples on page 1. Suggested time: 25 minutes.

Name: _____ Class: _____

1. Using the integer key, what value does 2 | 7 represent?

2. How many observations are in the integer plot?

3. Find the median and range of the integer scores.

4. Why must the two scores of 14 both appear in the first row?

5. Using the decimal key, find the median of the six task times.

Teacher answers and working

Stem-and-Leaf Plots: A Step-by-Step Guide with Practice Questions

Keep this page separate when handing out student pages 1-2.

Question 1

27 points, because the stem represents tens and the leaf represents units.

Question 2

11: there are four leaves on stem 1, four on stem 2 and three on stem 3.

Question 3

The sixth value is 23, so the median is 23 points. The range is 36 - 12 = 24 points.

Question 4

Each leaf represents one observation. Using only one leaf of 4 would remove one recorded score and reduce the count.

Question 5

The third and fourth sorted times are 1.4 and 1.8 minutes. Their average is (1.4 + 1.8) / 2 = 1.6 minutes.

Teaching notes

Omitting the key or assuming every leaf represents one whole unit.

Dropping repeated leaves and therefore changing the dataset.

Writing leaves in input order instead of numerical order.

All data is fictional. Accept equivalent notation and explanations. Encourage students to show calculations, units and the conventions used.