

Mean, median, mode, range – measures of centre and spread

MODULE 7 · DATA, CHANCE AND THE CO-ORDINATE PLANE SHAPE & SPACE

Four ways to summarise a set of numbers: **mean** (add them all, divide by the count), **median** (the middle one when sorted), **mode** (the one that appears most often), **range** (biggest – smallest).

→ Set: 4, 7, 7, 9, 13 → mean = 8, median = 7, mode = 7, range = 9.

HOW TO ANSWER TODAY

- **Mean (average).** Add ALL the numbers. Divide by HOW MANY there are.

Mean of 2, 5, 6, 9 → $(2+5+6+9) \div 4 = 22 \div 4 = 5.5$

- **Range (spread).** Range = BIGGEST minus SMALLEST.

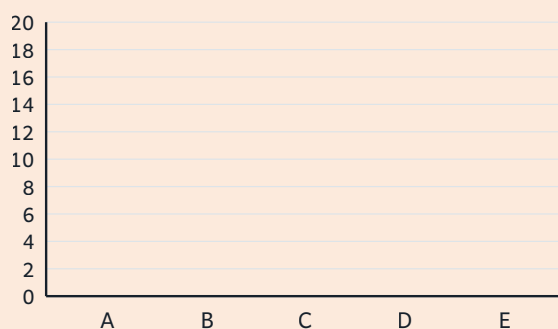
5, 12, 8, 3, 15 → $15 - 3 = 12$

- **Median (middle).** Put the numbers in ORDER. The median is the middle one. If two middles, take their mean.

1, 3, 5, 7, 9 → median 5 · 2, 4, 6, 8 → middles 4 and 6 → median 5

TRY IT ON THE LINE

Plot each test-score data set as a bar chart, then mark the mean (a horizontal line) and the range (a vertical span) on the chart.



1. Scores: A=14, B=12, C=18, D=10, E=16. Plot each as a bar.
2. **Mean** = $(14+12+18+10+16) \div 5 = \underline{\hspace{2cm}}$ → draw a horizontal dashed line at this height.
3. **Median** = middle value when sorted (10,12,14,16,18) = $\underline{\hspace{2cm}}$
4. **Mode** = $\underline{\hspace{2cm}}$ (or 'no mode' if every value occurs once)
5. **Range** = biggest – smallest = $18 - 10 = \underline{\hspace{2cm}}$