

Push Tasks

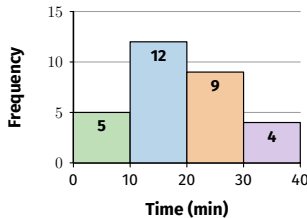


Estimate the mean of grouped data using each class's midpoint, weighted by its frequency.

1. Ages: 0–10 (freq 4), 10–20 (freq 10), 20–30 (freq 6). Estimate the mean age.

2. Test scores: 0–20 (freq 3), 20–40 (freq 9), 40–60 (freq 11), 60–80 (freq 7). Estimate the mean score.

3. Times taken.



Estimate the mean time.

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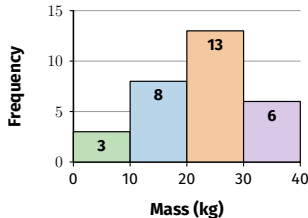


Estimate the median: find which class the middle value falls in, then interpolate across that class.

4. Test scores ($n = 30$):
0–20 (freq 6), 20–40 (freq 10), 40–60 (freq 9), 60–80 (freq 5).
Estimate the median.

5. Times ($n = 30$): 0–10 (freq 4), 10–20 (freq 9), 20–30 (freq 12), 30–40 (freq 5). Estimate the median (2 dp).

6. Parcel masses.



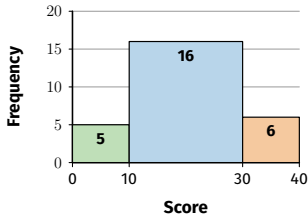
Estimate the median mass (2 dp).

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A bar's height only measures frequency fairly when every class has the same width.

7. Unequal widths.



Why does the middle bar overstate its class?

8. A histogram has classes 0–10 (freq 8) and 10–40 (freq 18). Which class has the higher frequency density?

9. True or false, with a reason: a bar twice as tall as another always represents twice as many data values.

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Read the cumulative frequency table, and combine group averages with a weighted average.

10. A cumulative frequency table:

Value <	10	20	30	40
CF	3	9	19	27

How many values lie between 20 and 40?

11. Class A: 8 students, 62%. Class B: 12 students, 71%. Class C: 10 students, 78%. Combined average (2 dp)?

12. A cumulative frequency table:

Value <	5	10	15	20
CF	4	12	22	28

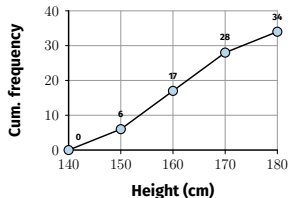
How many values are at least 15?

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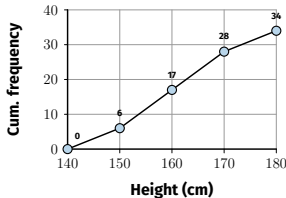
Read the cumulative frequency graph: the median is the value at half the total frequency.

13. 34 students' heights.



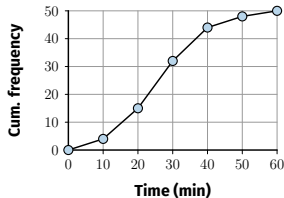
Estimate the median height.

14. Same 34 students.



Shorter than 155 cm?

15. 50 customers' waiting times.



Estimate the median wait.

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Frequency density lets you compare classes of different widths fairly.

16. A histogram has classes 0–10 (freq 12) and 10–30 (freq 18). Find the frequency density of each class, and state which class is more densely packed.