

Cumulative frequency: which step breaks?

Name _____

These follow one question, the heights of 80 sunflowers, from the table to the median and interquartile range, in order: running totals, plot at the top of each class, start the curve, how far up, read across and down, then the interquartile range.

- 1 The heights of 80 sunflowers. Work out the cumulative frequency for each class.

Height (cm)	Frequency
$120 < h \leq 140$	5
$140 < h \leq 160$	13
$160 < h \leq 180$	27
$180 < h \leq 200$	24
$200 < h \leq 220$	11

STEP 1: RUNNING TOTALS • FIX IT CARD 1

5, 18, 45, 69, 80

- 2 Which point do you plot for the class $160 < h \leq 180$?

Height (cm)	Frequency	Cumulative frequency
$120 < h \leq 140$	5	5
$140 < h \leq 160$	13	18
$160 < h \leq 180$	27	45
$180 < h \leq 200$	24	69
$200 < h \leq 220$	11	80

STEP 2: PLOT AT THE TOP OF THE CLASS • FIX IT CARD 2

(180, 45)

- 3 The points plotted are (140, 5), (160, 18), (180, 45), (200, 69) and (220, 80). At which point does the curve start?

STEP 3: START AND JOIN • FIX IT CARD 3

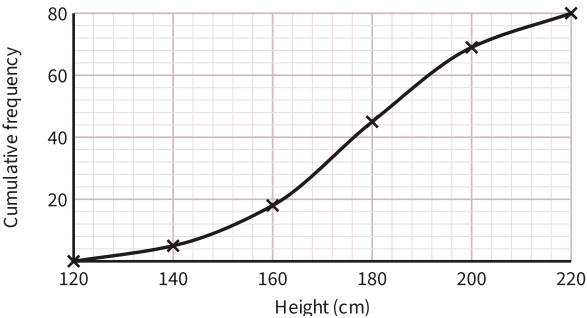
(120, 0)

- 4 The cumulative frequencies are 5, 18, 45, 69, 80. How far up do you go for the lower quartile, the median and the upper quartile?

STEP 4: HOW FAR UP • FIX IT CARD 4

20, 40 and 60

- 5 Find the median of the 80 sunflowers from their graph: read across from 40 and down.



STEP 5: READ ACROSS AND DOWN • FIX IT CARD 5

about 176 cm (172 to 180)

- 6 The lower quartile is 162 cm and the upper quartile is 191 cm. Find the interquartile range.

STEP 6: THE INTERQUARTILE RANGE • FIX IT CARD 6

29 cm