## Averaging group frequencies

## Estimating the mean

Grouped frequency tables do not contain the original values. They tell you "how many" fell into that category. To calculate the mean you would require actual values so when using grouped data you will need to **estimate** the **mean using** the **mid-interval** (average) **values** for each group.

	Height (cm)	141-145	146-150	151-155	156-160	161-165	Totals
а	Frequency	2	3	4	5	6	20
b	Mid-interval value	142.5	147.5	152.5	157.5	172.5	
	Frequency value ( <b>a</b> x <b>b</b> )	285	442.5	610	787.5	1035	3160

## Table showing the height of students in a class

	Definition	Definition when using frequencies	Average height
Mean	Sum of the items <b>divided by</b> the number of items	total frequency values <b>divided by</b> total frequency 3160 / 20 = 158cm	158cm
Mode (modal group)	The value that occurs most commonly in the list	frequency with the highest value the <b>group</b> with the highest frequency is called the <b>modal group</b> . the group 171-175 has the greatest number of students (6)	161- 165cm
Median	Total number of items (n + 1) <b>divided by</b> 2 Remember	total frequency +1 divided by 2 (20 + 1) / 2 21 / 2 = 10.5 Now find the 10.5 <sup>th</sup> value! 2 + 3 = 5 2 + 3 + 4 = 9 2 + 3 + 4 + 5 = 14, so the 10.5 <sup>th</sup> value falls in the 4 <sup>th</sup> group: 156-160cm.	156- 160cm