

Types of Data	Qualitative Data – non-numerical data Quantitative Data – numerical data Continuous Data – data that can take any numerical value within a given range. Discrete Data – data that can take only specific values within a given range.	Qualitative Data – eye colour, gender etc. Continuous Data – weight, voltage etc. Discrete Data – number of children, shoe size etc.																				
Grouped Data	Data that has been bundled in to categories . Seen in grouped frequency tables, histograms, cumulative frequency etc.	<table><tr><th>Foot length, <i>l</i>, (cm)</th><th>Number of children</th></tr><tr><td>$10 \leq l < 12$</td><td>5</td></tr><tr><td>$12 \leq l < 17$</td><td>53</td></tr></table>	Foot length, <i>l</i> , (cm)	Number of children	$10 \leq l < 12$	5	$12 \leq l < 17$	53														
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Mean	Add up the values and divide by how many values there are.	The mean of 3, 4, 7, 6, 0, 4, 6 is $\frac{3 + 4 + 7 + 6 + 0 + 4 + 6}{7} = 5$																				
Median Value	The middle value. Put the data in order and find the middle one. If there are two middle values , find the number half way between them by adding them together and dividing by 2 .	Find the median of: 4, 5, 2, 3, 6, 7, 6 Ordered: 2, 3, 4, 5 , 6, 6, 7 Median = 5																				
Mode /Modal Value	Most frequent/common. Can have more than one mode (called bi-modal or multi-modal) or no mode (if all values appear once)	Find the mode: 4, 5, 2, 3, 6, 4, 7, 8, 4 Mode = 4																				
Range	Highest value subtract the Smallest value Range is a ‘measure of spread’. The smaller the range the more <u>consistent</u> the data.	Find the range: 3, 31, 26, 102, 37, 97. Range = $102-3 = 99$																				
Mean from a Table	1. Find the midpoints (if necessary) 2. Multiply Frequency by values or midpoints 3. Add up these values 4. Divide this total by the Total Frequency If grouped data is used, the answer will be an estimate .	<table><tr><th>Height in cm</th><th>Frequency</th><th>Midpoint</th><th>F × M</th></tr><tr><td>$0 < h \leq 10$</td><td>8</td><td>5</td><td>$8 \times 5 = 40$</td></tr><tr><td>$10 < h \leq 30$</td><td>10</td><td>20</td><td>$10 \times 20 = 200$</td></tr><tr><td>$30 < h \leq 40$</td><td>6</td><td>35</td><td>$6 \times 35 = 210$</td></tr><tr><td>Total</td><td>24</td><td>Ignore!</td><td>450</td></tr></table> Estimated Mean height: $450 \div 24 = 18.75\text{cm}$	Height in cm	Frequency	Midpoint	F × M	$0 < h \leq 10$	8	5	$8 \times 5 = 40$	$10 < h \leq 30$	10	20	$10 \times 20 = 200$	$30 < h \leq 40$	6	35	$6 \times 35 = 210$	Total	24	Ignore!	450
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Median from a Table	Use the formula $\frac{(n+1)}{2}$ to find the position of the median. <i>n</i> is the total frequency.	If the total frequency is 15, the median will be the $\left(\frac{15+1}{2}\right) = 8\text{th}$ position																				

