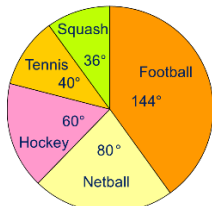


Topic: Data Handling

Topic/Skill	Definition/Tips	Example																					
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.																					
Mean	Add up the values and divide by how many values there are.	The mean of 3, 4, 7, 6, 0, 4, 6 is $\frac{3 + 4 + 7 + 6 + 0 + 4 + 6}{7} = 5$																					
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 border="1"><thead><tr><th>Height in cm</th><th>Frequency</th><th>Midpoint</th><th>F × M</th></tr></thead><tbody><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></tbody></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 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																					
Median from a Table	Use the formula $\frac{(n+1)}{2}$ to find the position of the median. n 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																					
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 = $102 - 3 = 99$																					
Frequency Table	A record of how often each value in a set of data occurs .	<table border="1"><thead><tr><th>Number of marks</th><th>Tally marks</th><th>Frequency</th></tr></thead><tbody><tr><td>1</td><td> </td><td>7</td></tr><tr><td>2</td><td> </td><td>5</td></tr><tr><td>3</td><td> </td><td>6</td></tr><tr><td>4</td><td> </td><td>5</td></tr><tr><td>5</td><td> </td><td>3</td></tr><tr><td>Total</td><td></td><td>26</td></tr></tbody></table>	Number of marks	Tally marks	Frequency	1		7	2		5	3		6	4		5	5		3	Total		26
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Pie Chart	Used for showing how data breaks down into its constituent parts . When drawing a pie chart, divide 360° by the total frequency . This will tell you how many																						

	degrees to use for the frequency of each category. Remember to label the category that each sector in the pie chart represents.	If there are 40 people in a survey, then each person will be worth $360 \div 40 = 9^\circ$ of the pie chart.
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Where else is the Data Handling topic used: Graphs Probability Ratio and proportion	Links to other subjects: Sciences (Physics, Biology and Chemistry) Humanities (Geography and History)
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