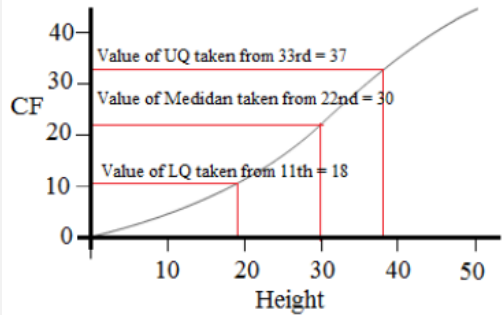




Topic/Skill	Definition/Tips	Example										
1. Histograms	<p>A visual way to display frequency data using bars.</p> <p>Bars can be unequal in width.</p> <p>Histograms show frequency density on the y-axis, not frequency.</p> <p>Frequency Density = $\frac{\text{Frequency}}{\text{Class Width}}$</p> <table><thead><tr><th>Height(cm)</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < h \leq 10$</td><td>8</td></tr><tr><td>$10 < h \leq 30$</td><td>6</td></tr><tr><td>$30 < h \leq 45$</td><td>15</td></tr><tr><td>$45 < h \leq 70$</td><td>5</td></tr></tbody></table>	Height(cm)	Frequency	$0 < h \leq 10$	8	$10 < h \leq 30$	6	$30 < h \leq 45$	15	$45 < h \leq 70$	5	<div><div>Frequency Density (FD)</div><div>$8 \div 5 = 1.6$</div><div>$6 \div 20 = 0.3$</div><div>$15 \div 15 = 1$</div><div>$5 \div 25 = 0.2$</div></div>
Height(cm)	Frequency											
$0 < h \leq 10$	8											
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$45 < h \leq 70$	5											
2. Interpreting Histograms	<p>The area of the bar is proportional to the frequency of that class interval.</p> <p>Frequency = Freq Density \times Class Width</p>	<p>A histogram shows information about the heights of a number of plants. 4 plants were less than 5cm tall. Find the number of plants more than 5cm tall.</p> <p>Above 5cm: $1.2 \times 10 + 2.4 \times 15 = 12 + 36 = 48$</p>										
3. Cumulative Frequency	<p>Cumulative Frequency is a running total.</p> <table><thead><tr><th>Age</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < a \leq 10$</td><td>15</td></tr><tr><td>$10 < a \leq 40$</td><td>35</td></tr><tr><td>$40 < a \leq 50$</td><td>10</td></tr></tbody></table>	Age	Frequency	$0 < a \leq 10$	15	$10 < a \leq 40$	35	$40 < a \leq 50$	10	<div><div>Cumulative Frequency</div><div>15</div><div>$15 + 35 = 50$</div><div>$50 + 10 = 60$</div></div>		
Age	Frequency											
$0 < a \leq 10$	15											
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4. Cumulative Frequency Diagram	<p>A cumulative frequency diagram is a curve that goes up. It looks a little like a stretched-out S shape.</p> <p>Plot the cumulative frequencies at the end-point of each interval.</p>											



5. Quartiles from Cumulative Frequency Diagram	<p>Lower Quartile (Q1): 25% of the data is less than the lower quartile.</p> <p>Median (Q2): 50% of the data is less than the median.</p> <p>Upper Quartile (Q3): 75% of the data is less than the upper quartile.</p> <p>Interquartile Range (IQR): represents the middle 50% of the data.</p>	 <p>A cumulative frequency diagram showing the relationship between Height (x-axis, 0 to 50) and Cumulative Frequency (y-axis, 0 to 40). The curve starts at (0,0) and ends at (50,40). Three points are marked on the curve with red lines extending to the axes: the Lower Quartile (LQ) at Height 18 (CF 10), the Median at Height 30 (CF 20), and the Upper Quartile (UQ) at Height 37 (CF 30). Labels indicate: 'Value of UQ taken from 33rd = 37', 'Value of Median taken from 22nd = 30', and 'Value of LQ taken from 11th = 18'.</p> <p>$IQR = 37 - 18 = 19$</p>
6. Hypothesis	<p>A statement that might be true, which can be tested.</p>	<p>Hypothesis: 'Large dogs are better at catching tennis balls than small dogs'.</p> <p>We can test this hypothesis by having hundreds of different sized dogs try to catch tennis balls.</p>