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| **Topic/Skill**  | **Definition/Tips** | **Example****Topic: Histograms and Cumulative Frequency**  |
| 1. Histograms | A visual way to display frequency data using bars.Bars can be **unequal in width**.Histograms show **frequency density** on the **y-axis**, not frequency.$$Frequency Density= \frac{Frequency}{Class Width}$$ |  |
| 2. Interpreting Histograms | The **area** of the bar is proportional to the **frequency** of that class interval.$$Frequency=Freq Density ×Class Width$$ | 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.Above 5cm:1.2 x 10 + 2.4 x 15 = 12 + 36 = 48 |
| 3. Cumulative Frequency | Cumulative Frequency is a **running total**. |  |
| 4. Cumulative Frequency Diagram | A cumulative frequency diagram is a **curve that goes up**. It looks a little like a stretched-out **S shape**.Plot the cumulative frequencies at the **end-point** of each interval. |  |
| 5. Quartiles from Cumulative Frequency Diagram | **Lower Quartile** (Q1): **25%** of the data is less than the lower quartile. **Median** (Q2): **50%** of the data is less than the median.**Upper Quartile** (Q3): **75%** of the data is less than the upper quartile.**Interquartile Range (IQR)**: represents the **middle 50%** of the data. | $$IQR=37-18=19$$ |
| 6. Hypothesis | **A statement that might be true, which can be tested.** | Hypothesis: ‘Large dogs are better at catching tennis balls than small dogs’.We can test this hypothesis by having hundreds of different sized dogs try to catch tennis balls. |

**Knowledge Organiser**