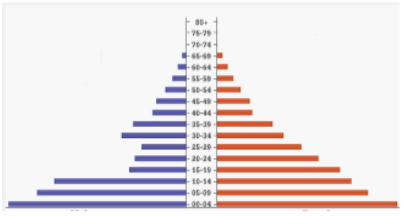
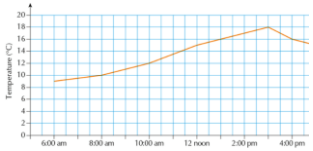
# Statistics – Presentation and Interpretation of Data – Knowledge Organiser

| | |
|---|---|
| **Objective** | Understand and use the language associated with statistics |
| | Construct and interpret variety of different frequency tables |
| | Construct and interpret variety of different graphs |
| | Calculate and interpret averages from a set of data |

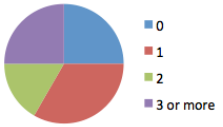


## Key Facts

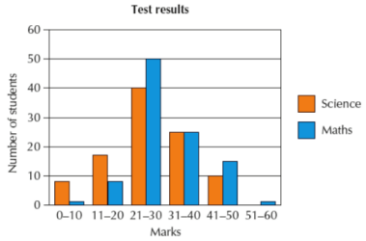
A **line graph** looks like this:



A **pie chart** looks like this:




A **comparative bar chart** looks like this:

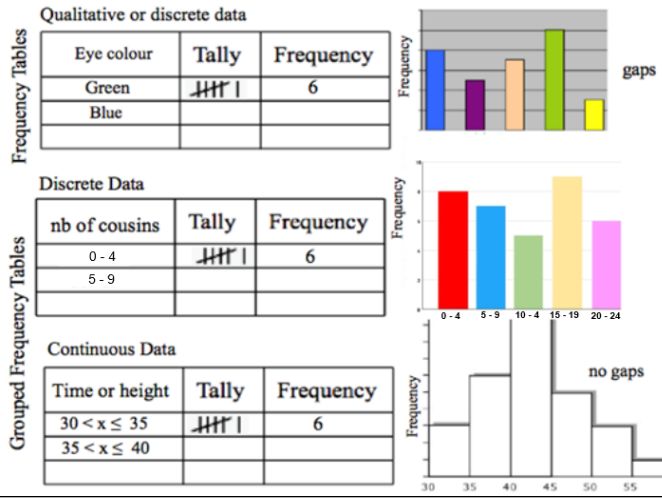



**Range** =
Largest Value - Smallest Value

**Mode** = Most common

**Median** = In the middle (first arrange in size order)

**Mean** = Add them up and divide by how many there are




The **frequency table** below gives data on the heights, in cm, of 51 children.

| *Class Interval* | *Mid-point* | *Frequency* | *Mid-point × Frequency* |
|---|---|---|---|
| $140 \le h < 150$ | 145 | 6 | 145 × 6 = 870 |
| $150 \le h < 160$ | 155 | 16 | 155 × 16 = 2480 |
| $160 \le h < 170$ | 165 | 21 | 165 × 21 = 3465 |
| $170 \le h < 180$ | 175 | 8 | 175 × 8 = 1400 |
| | **Totals** | **51** | **8215** |

**Mean** = 8215 ÷ 51 = 161.1 cm

**Modal class** = 160 < x ≤ 170 cm (most children are this height)

The **median** is the $\frac{(n+1)}{2}$ **th value** = $\frac{(51+1)}{2}$ = 26th value

The **class containing the median** is 160 < x ≤ 170 cm

## Key words used in this unit:

**Qualitative (categorical) data –** non-numerical, for example colour

**Discrete data –** can be counted, for example number of sheep

**Continuous data –** can take any value on a number line (including decimals), for example height or time

**Grouped data –** is put into groups, for example 0 to 5 (discreet) or 5 < x ≤ 10 (continuous)

**Pictogram –** chart for which a symbol represents a frequency

**Frequency –** number of items

**Tally –** a way to count items: 𝍸

**Time graph –** line graph with the time on the horizontal axis

**Scale –** how spaced out the numbers are on the axes

**Sector** – "slice" of a pie chart

**Spread** - how far the numbers are from the mean or the median

**Consistency** – how little do the numbers vary? If they are all close together, they are consistent.