

Frequency Tables

These are a useful and clear way of displaying data

E.g. The table below shows the scores out of ten for 20 students

Mark	Tally	Frequency
4		2
5		2
6		4
7		5
8		4
9		2
10		1

Frequency means how often something occurs

This means 5 students scored 7 marks in their test

Graphs Tables and Charts



Two-Way Tables

[Video 319](#)

These are used to show how data falls into 2 different categories
For example gender and favourite sport to watch

What is your favorite sport to watch on television?

	Football	Basketball	Baseball
Males	40	22	15
Females	12	16	45
Total	52	38	60

A two-way table divides data into groups in rows going across and columns going down the table

[Video 169](#)

Stem and Leaf Diagrams

[Video 170](#)

This shows numerical data split into a 'stem' and 'leaves'. The leaf is usually the last digit and the stem is the other digits.

Here are the heights of some students (in cm).
169, 163, 153, 173, 166, 178, 177
Construct a stem and leaf diagram for this data.

15 | 3
16 | 9 3 6
17 | 3 8 7

Decide on a stem. Write the numbers in your diagram as you work along the data list.

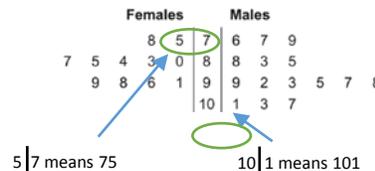
15 | 3
16 | 3 6 9
17 | 3 7 6

Put the leaves in your diagram in order.

Key: 15|3 means 153 cm

Write a key for your diagram.

A back-to-back stem and leaf diagram compares 2 sets of data. E.g. the ages of males and females



Grouped Frequency Tables

These contain sorted data in groups called **classes**

E.g. The table below shows the ages of people taking swimming lessons

Class Interval	Frequency
15 – 25	60
25 – 35	35
35 – 45	22
45 – 55	18
55 – 65	15

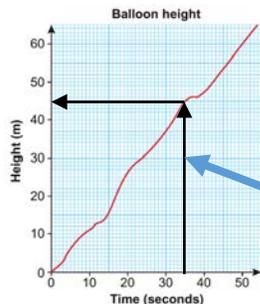
Total frequency will tell you the total number of people taking swimming lessons

This means 18 people who took swimming lessons were between the ages of 45 and 55

Classes or class widths

Time-Series Graph

These are used to show how something changes over time. It is a line graph with time plotted along the horizontal axis
For example the height of a balloon at different times



You can estimate the height of the balloon at different times using the graph

E.g. the height of the balloon at 35 seconds is approximately 45m as shown by the arrows on the graph

[Video 163 - Drawing](#)

Pie Charts

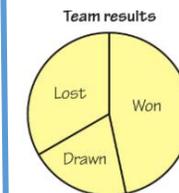
[Video 164 - Interpreting](#)

This is a circle divided into **sectors**. Each sector represents a set of data.
Pie charts are excellent for displaying the most/ least popular type of something.

Plotting pie charts example

The table show the match results of a football team.

Result	Won	Drawn	Lost
Frequency	28	12	20



$28 + 12 + 20 = 60$

The total number of games is the total frequency.

$1 \text{ game} = 360^\circ \div 60 \text{ games} = 6^\circ \text{ per game}$

Work out the angle for one game.

360° in a circle

$28 \text{ games won} = 28 \times 6^\circ = 168^\circ$

$12 \text{ games drawn} = 12 \times 6^\circ = 72^\circ$

$20 \text{ games lost} = 20 \times 6^\circ = 120^\circ$

Work out the angle for each result.

Draw the pie chart. Give it a title and a key. Or label each section

Comparative Bar Charts

The table shows the number of cars sold by Kitty and George in the first four months of 2014.

[Video 147](#)
[Video 148](#)

	January	February	March	April
Kitty	2	5	13	10
George	4	7	9	10



Key
Kitty (blue)
George (green)

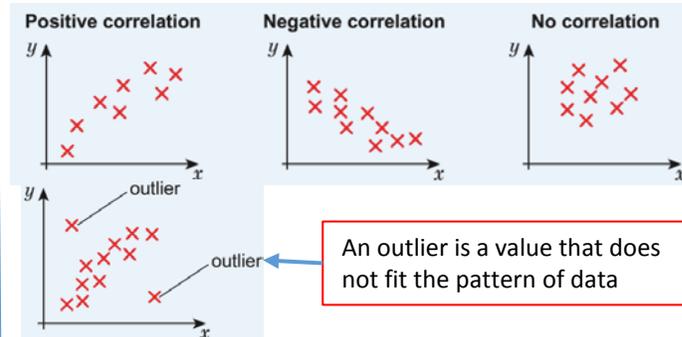
The chart has a key to make it easier to understand.

A comparative bar chart allows you to easily compare the number of cars Kitty and George sold each month.

Scatter Graphs

A scatter graph allows you to see the **relationship** between 2 sets of data. E.g. your height and your stride length.

Correlation is used to describe a relationship between 2 **variables**

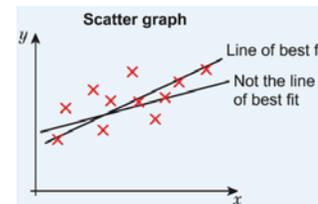


An outlier is a value that does not fit the pattern of data

A line of best fit

[Videos 165 - 168](#)

This is a straight line drawn through the middle of the points on a scatter graph. It should pass as near as many points as possible and represents the **trend** of the points.



A line of best fit can be used to predict data values within the range of data given. This is called **interpolation**. It can also be used to predict data values outside the range of data given. This is called **extrapolation**.