

Y10 Maths Knowledge Organiser Foundation Tier: Representation and Interpretation

What must I be able to do?	Key vocabulary	
New content: <ul style="list-style-type: none"> Know how to obtain a random sample from a population <ul style="list-style-type: none"> Sparx U162 Be able to draw and interpret pie charts <ul style="list-style-type: none"> Sparx U508, U172 Draw scatter graphs and use lines of best fit <ul style="list-style-type: none"> Sparx M596, M769 	Population	The whole group of people or items being studied
	Sample	A selection taken from the population
	Correlation	A measure of <u>relationship</u> between <u>two variables</u> .

Pie Charts

Favourite Subject	Number of students	Angle calculation	Angle to draw
Maths	30	$30 \div 60 \times 360 =$	180°
English	20	$20 \div 60 \times 360 =$	120°
Science	10	$10 \div 60 \times 360 =$	60°
Total = 60			



Step 1: Work out the total number of students by adding the frequency up

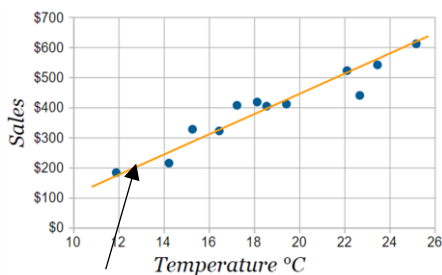
Step 2: For each frequency divide it by the total and multiply by 360 (as the total angles in a circle = 360°)

Step 3: Now draw your pie chart, measuring these angles and labelling each sector

Drawing and using scatter graphs

e.g.

Temperature °C	Ice Cream Sales
14.2°	\$215
16.4°	\$325
11.9°	\$185
15.2°	\$332
18.5°	\$406
22.1°	\$522
19.4°	\$412
25.1°	\$614
23.4°	\$544
18.1°	\$421
22.6°	\$445
17.2°	\$408



Line of best fit.

Drawn by hand **using a ruler** to fit the data as best as possible.

Shows the general trend and can be used to make predictions if you only knew one value

e.g. if the temperature was to be 21°C you would predict sales of about \$480 by reading up to the line of best fit from 21°C.

The line of best fit does not usually go through (0, 0).

Each pair of values is plotted as a point on the scatter graph

e.g. (17.2, \$408)

Sampling

Rather than work with an entire population, you would usually pick a sample. This is faster, cheaper and provided you have a suitable sample, will give a good estimation of the results from the population.

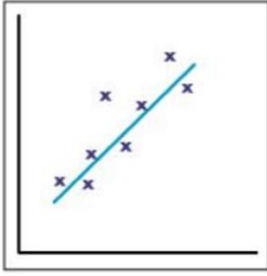
Random samples are where each item in the population has an equal chance to be picked.

The most common method to find a random sample is assigning each value in the population a number, then randomly picking numbers e.g. by selecting from out of a hat or using a random number generator.

In general, a larger sample will give more accurate results so if one person picks 10 people, and another picks 30 people, the results of the 30 people would be more accurate.

Repeating a test with a different sample can lead to different results.

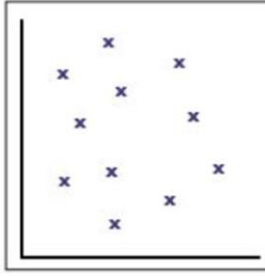
Types of correlation



Positive correlation:
As one value increases,
so does the second.



Negative correlation:
As one value increases,
the second decreases



No correlation.

When plotting a scatter graph you will usually be asked to describe the type of correlation. This is the relationship between the two variables plotted.

GLUE

HERE