What makes a good questionnaire

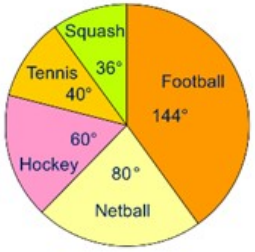
- Short, clear questions
- Option boxes that don't over-lap
- Option boxes that allow for any answer to be given
- Not too many questions
- No leading/bias questions

Data collection chart

Colour of Car	Tally	Frequency
White	𝍸 I	6
Black	III	3

Draw and interpret pie charts

Used for showing how data breaks down into its constituent parts. When drawing a pie chart, divide 360° by the total frequency. This will tell you how many degrees to use for the fre-quency of each category.



Year 8 foundation topic 3

Statistics, graphs and charts

What careers would use these skills?

Statistician, economist, software engi-neer, scientist, business analyst, finan-cial analyst, market research.

Averages definitions

Mean: Add up the values and divide by how many values there are. This is what people normally mean when they say the average.

Mode: The most common.

Median: Middle value when in order.

Range: The difference between the largest and smallest values

Mean from a table

Times →
Add ↓↓
Divide ←

Data value	Frequency	Frequency x Data Value
2	3	6
3	2	6
4	5	20
	10	32

Mean = 32 ÷ 10 = 3.2

If the table has **grouped data**, use the midpoint of each class to multiply by the frequency. (Then times, add and divide as above)

Scatter graph and correlation

A graph in which values of two variables are plotted along two axes to compare them and see if there is any connection be-tween them. Correlation between two sets of data means they are connected in some way.

Positive correlation: as one value increases, the other value increases.

Negative correlation: as one value increases, the other value decreases.

Drawing a line of best fit on the data can help to make predictions.

Stem and leaf (and averages)

A data display that shows groups of da-ta arranged by place value. Leaves should be in order. Must have a key.

STEM	LEAF
0	7
1	0 5 5 5 7 9
2	0 2 2 6 7
3	0 2 4 6 8

Key : 6 | 1 = 61 hours

Compare data using averages

When comparing two sets of data, calculate the mean and the range, this will show you the 'average' and the spread of the data around the mean.

Show numerical values and make concluding state-ments.