



What should I already know?

- How to solve problems involving timetables and tables
- How to solve problems with frequency trees
- How to solve problems with bar charts and line charts
- How to plot coordinates in all four quadrants

What will I know by the end of the unit?

- How to draw and interpret scatter graphs
- How to understand and describe linear correlation
- How to draw and use a line of best fit
- How to identify non-linear relationships
- How to identify different types of data
- How to read and interpret ungrouped frequency tables
- How to read and interpret grouped frequency tables
- How to represent grouped discrete data
- How to represent continuous data grouped into equal classes
- How to represent data in two way tables

Vocabulary

Variable	Positive	Discrete	Group
Scale	Weak	Counted	Tally
Increase	Line of best fit	Continuous	Frequency
Decrease	Origin	Qualitative	Range
Relationship	Estimate	Measured	Equal
Coordinate	Straight	Quantitative	Class
Origin	Extrapolate	Frequency	Class boundary
Axis	Estimate	Total	Fraction
Relationship	Outlier	Ungrouped	Percentage
Correlation	Non-linear	Subtotal	Ratio
Strong	Variable	Grouped	

Homework tasks

- Homework will be set by your teacher
- You should complete at least 30 minutes of maths tasks on Maths Whizz (not games). Please attend help sessions if you do not have access to the internet at home
- Additional work you could complete:
 - Find out more about the meaning of the vocabulary list using <http://www.amathsdictionaryforkids.com/>
- To challenge yourself: Answer the key questions to deepen your knowledge

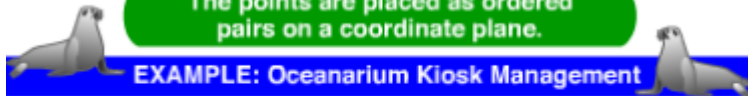


Diagram and Key Information

Scatter Diagrams/ Scatter Graphs/Scatter Plots

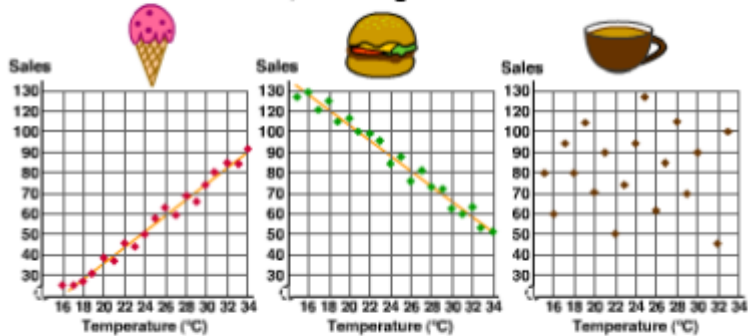
A scatter plot is a diagram where points are plotted to show the relationship (correlation) between two variables.

The points are placed as ordered pairs on a coordinate plane.



EXAMPLE: Oceanarium Kiosk Management

To manage ordering supplies more effectively, three scatter plots were made to see if there was any correlation between daily temperatures and sales of ice cream, hamburgers and coffee.



Positive Correlation
A positive trend - as one set of values increases, the other set increases.
For example, as the temperature went up ice cream sales went up.

Negative Correlation
A negative trend - as one set of values increases, the other set decreases.
For example, as the temperature went up hamburger sales went down.

No Correlation
No trend - the points are scattered randomly with no visible pattern.
For example, as the temperature went up there was no apparent effect on coffee sales.

A line of best fit or trend line is a straight line that best represents the values on a scatter plot.

Key Questions

How do we use the data to generate coordinates?
Does it matter if the data points are not in size order?
How do we know how long to draw our axes?
How do we know what scale to use on our axes?
Which labels do we need to place on our graph?

How can you tell if correlation is positive or negative?
How is correlation useful to us? Can you give some real-life examples?
What's the same and what's different about positive and negative correlation? Can you give some real-life examples for each?

What does 'extrapolate' mean?

Why might it be a risk to make an estimate outside of the range of your data?

What does non-linear mean?

Draw different representations of non-linear scatter graphs and add on possible labels for the axes.

How can we recognise discrete, continuous and qualitative data? Give me examples of each type.

Why do we need to know about different types of data?

Why do we sometimes have a gap between bars on a bar chart?



True or false:

- The line of best fit has to go through the origin
- The line of best fit goes through as many points as possible
- The line of best fit extends across the whole graph

Why do you need the line of best fit in order to make a good estimate? How can you show your method for estimating on the graph?

What does the word frequency mean?

What type of data is best represented by ungrouped frequency tables?

How can I calculate subtotals in my frequency table?

Do I still need the row if the frequency is 0?