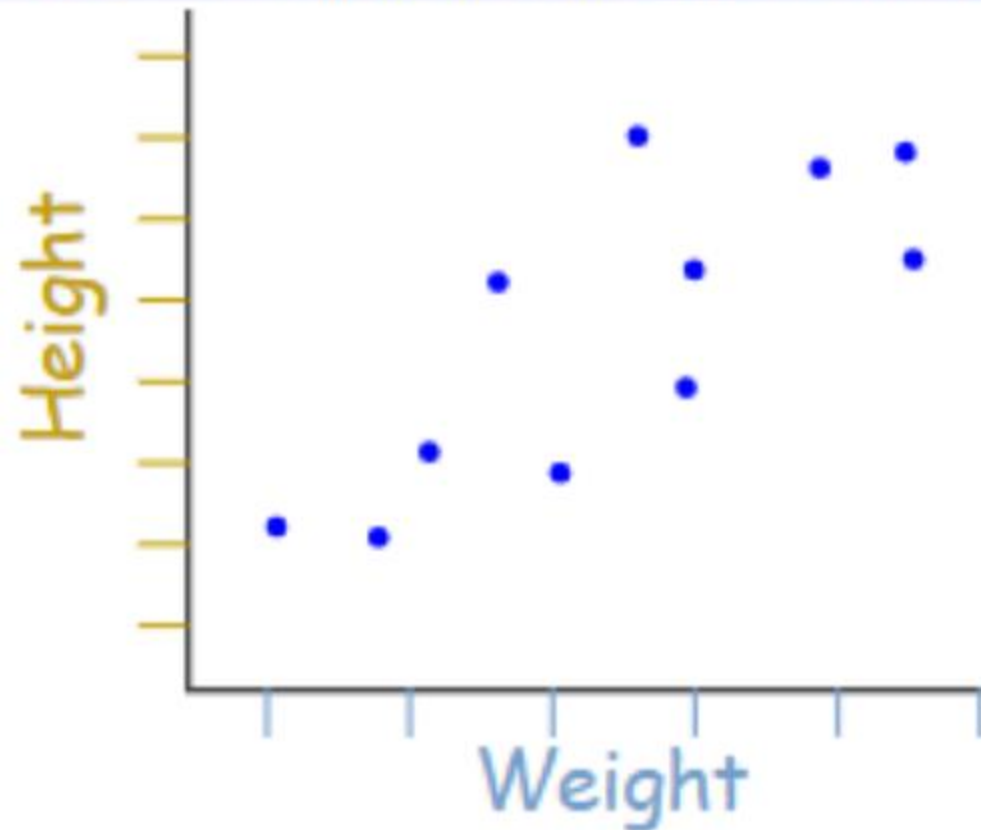


L/O: to understand how to plot and read a scatter graph.



A Scatter (XY) Plot has points that show the relationship between two sets of data.

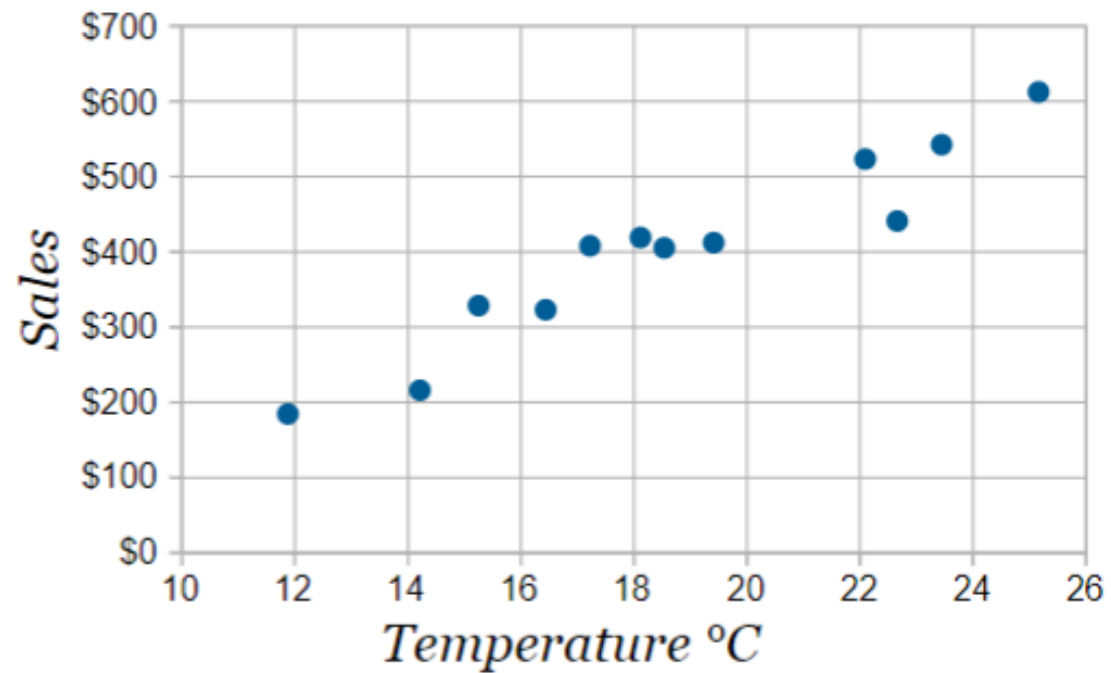
In this example, each dot shows one person's weight versus their height.

Example:

The local ice cream shop keeps track of how much ice cream they sell versus the noon temperature on that day. Here are their figures for the last 12 days:

<i>Ice Cream Sales vs Temperature</i>	
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

And here is the same data as a Scatter Plot:



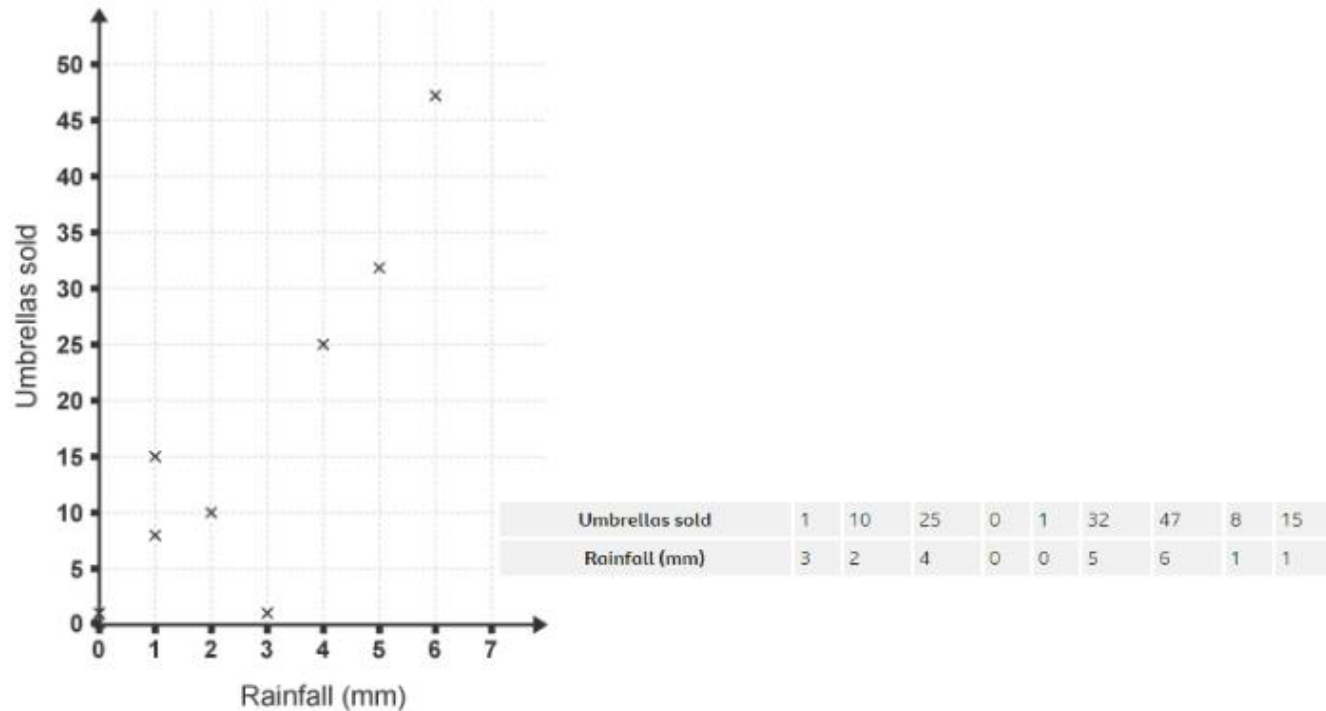
It is now easy to see that **warmer weather leads to more sales**, but the relationship is not perfect.

Scatter graphs

Scatter graphs are a good way of displaying two sets of **data** to see if there is a **correlation**, or connection.

Example

The number of umbrellas sold and the amount of rainfall on 9 days is shown on the scatter graph and in the table.

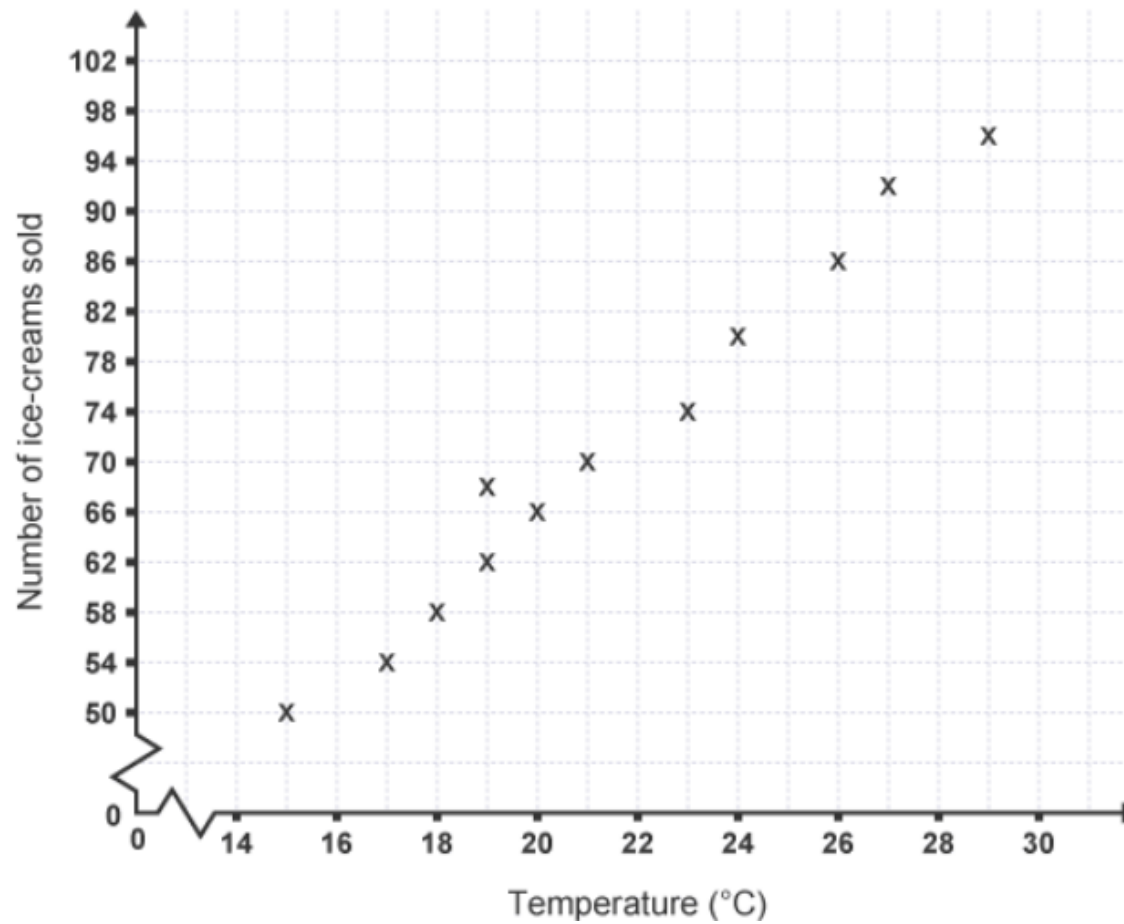


The graph shows that there is a positive correlation between the number of umbrellas sold and the amount of rainfall. On days with higher rainfall, there were a larger number of umbrellas sold.

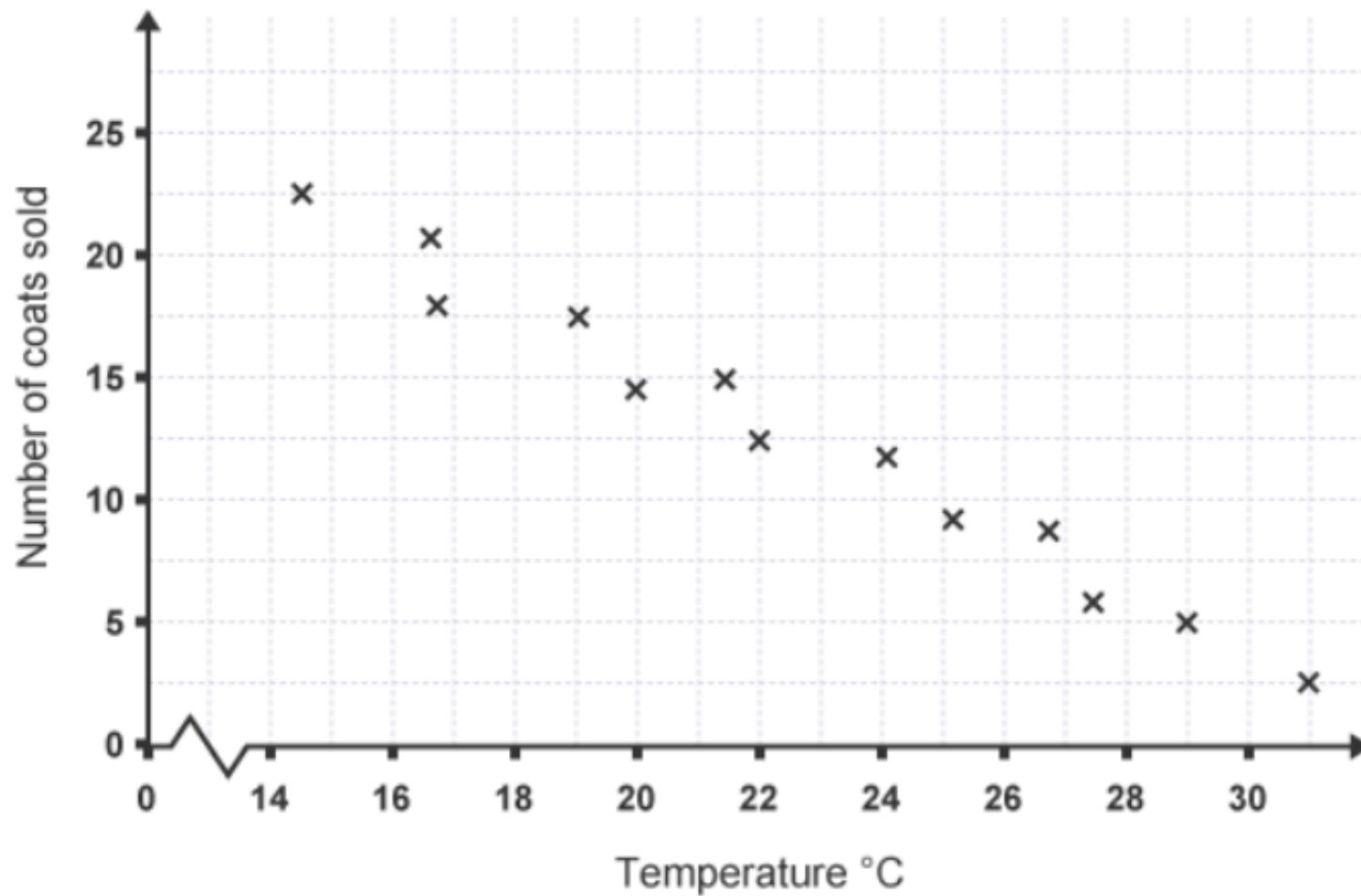
Types of correlation

Graphs can either have positive correlation, negative correlation or no correlation.

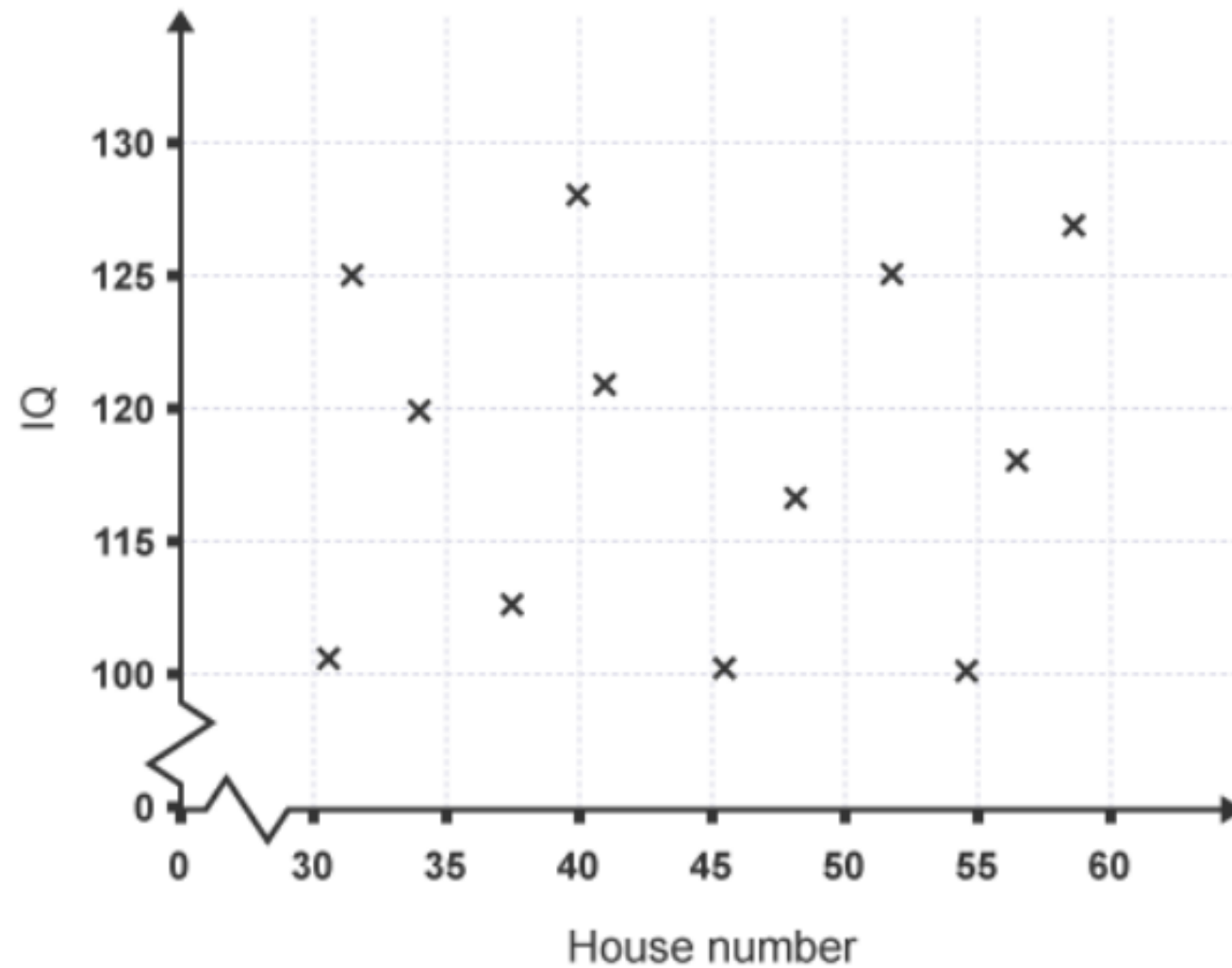
Positive correlation means as one variable increases, so does the other variable. They have a positive connection.



Negative correlation means as one variable increases, the other variable decreases. They have a negative connection.

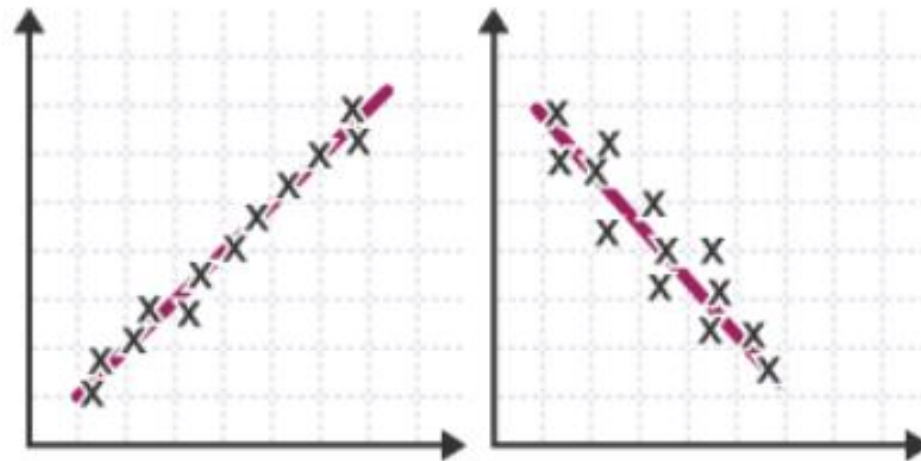


No correlation means there is no connection between the two variables.



Lines of best fit

A **line of best fit** is a sensible straight line that goes as centrally as possible through the coordinates plotted. It should also follow the same steepness of the crosses.



The line of best fit for the scatter graph would look like this:

