



52 - Scatter Graphs

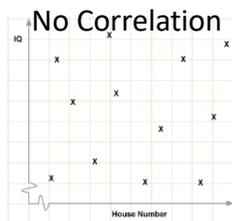
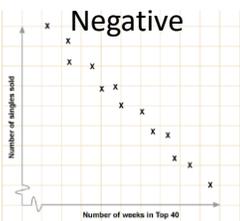
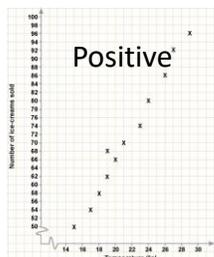
Correlation

Correlation is a fancy word for relationship. We can describe the correlation of a scatter graph in one of the following ways:

Positive: as one variable increases, so does the other.
e.g speed and distance travelled/shoe size and height

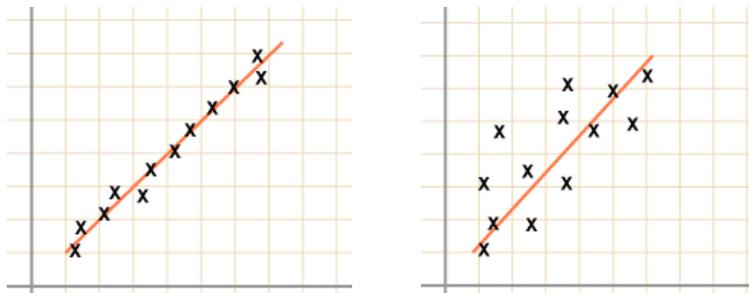
Negative: as one variable increases, the other decreases.
e.g. temperature and soup sales/price and willingness to buy

No correlation: the two variables are not related.
e.g. distance to school and grades/temperature and newspaper sales

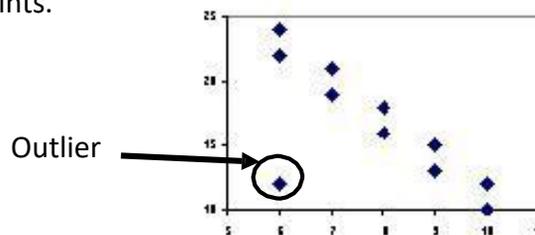


Line of Best Fit

A line of best fit is a **straight** line that is drawn so that all the points are evenly distributed on each side of the line. The closer the points are to the line of best fit, the stronger the relationship between the two variables is.



An outlier is a point which does not fit the general trend. It will be far away from the line of best fit, isolated from other points.



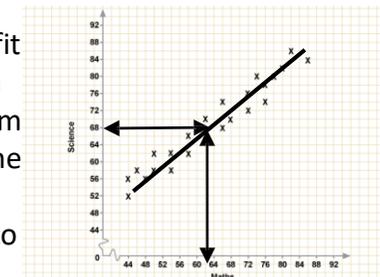
Using Scatter Graphs

We can use scatter graphs to predict the result when we are given a piece of information about one of the variables. This can be done in one of two ways.

Interpolation:

We use this method when the variable given falls inside the range of data we already have.

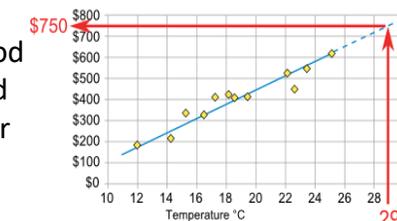
- Step 1: Draw a line of best fit for the scatter graph
- Step 2: Read up/across from the given point to the line of best fit
- Step 3: Read across/down to the other axis



Extrapolation:

This is when the variable given falls outside the range of data we have.

We use the exact same method except we first need to extend the line of best fit to reach our variable



Linked Prior Topics

Types of data, collecting data, coordinates, axis

Vocabulary

Variable, correlation, positive, negative, line of best fit, relationships, trends, extrapolation, interpolation, bivariate data

Linked Future Topics

Straight line graphs, frequency polygons, conversion graphs,