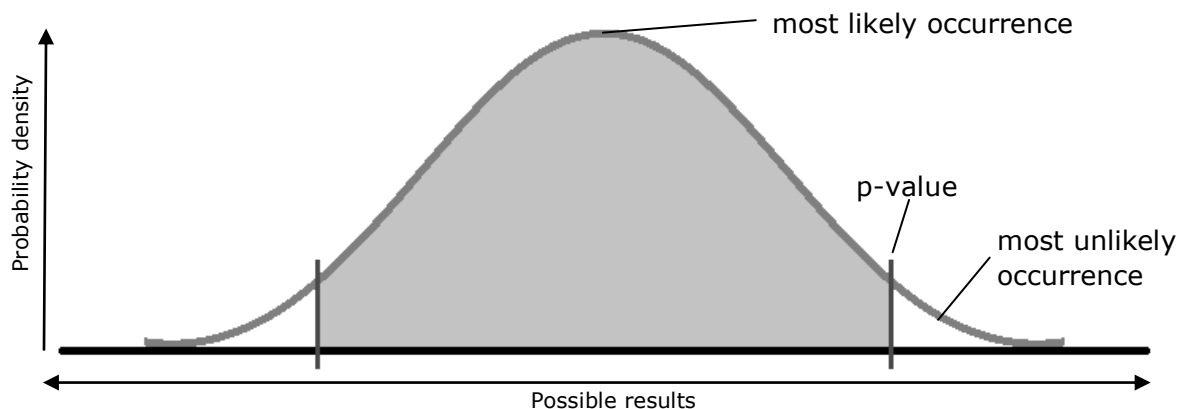# Statistical Significance

What is 'statistical significance'?

Statistical significance refers to the probability that the effect of what is being measured is down to chance. There are many things that can impact on the outcome of an experiment and the job of researchers is to minimise outside influences as much as possible in order to reliably test their hypotheses. Whilst in some fields it is easier to control variables, such as whether a patent has a medication or not, where schools and education are concerned there are often a lot of factors that are outside the control of researchers.

What is a 'p' value?

A p-value is used to test evidence against the null-hypothesis. The null hypothesis is the default position that there is no relationship between what is being measured. By finding the probability that something has not happened by chance, researchers can disprove the null hypothesis and conclude that what they are testing is responsible for the changes that have occurred.

The smaller the p-value, the smaller the likelihood that something has happened by chance. A p-value of <0.05 is commonly used to measure statistical significance. This indicates that any differences observed are only likely to occur less than 5% of the time.

Whilst a measure below the stated p-level may be interpreted as statistically significant, it does not on its own mean that the hypothesis being tested is true. It can be argued that any p-value figure is arbitrary and other supporting statistical evidence is often needed to establish the outcomes of an investigation.