Statistical Tests in Psychology

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The point of statistical testing is to help us to feel confident that our results have not happened simply due to chance, and that there is a genuine difference between the groups/conditions studied. (Though in reality it is far more complicated; for the purposes of A-level we won't get into the debate).

For example, imagine that we give males and females a memory test. Let's say that males get a mean score of 14.5, and females get a mean score of 13.9. Does that actually mean that males are better on this test than females? Or could it be that by chance, some of the males happened to get a slightly better score and that in reality there is no difference between males and females? A stats test will help us to assess the significance of our finding.

As an A-level psychology student, you are expected to know when to use certain statistical tests (the only one you have to be able to actually carry out is the sign test).

Choosing a Stats Test

The following table is a handy summary. Simply use what you know about the study's design and the level of measurement and look in the appropriate row and column.

	Design		
	Unrelated (Looking for a Difference Between Groups; Independent)	Related (Looking for a Difference Between Groups; Repeated Measures or Matched Pairs)	Correlational (Looking for a Relationship Between Variables)
Nominal (categorical)	Chi Squared	<mark>S</mark> ign Test	<mark>C</mark> hi Squared
Ordinal (subjective scale)	Mann Whitney U	Wilcoxon	<mark>S</mark> pearman's Rank (Rho)
Interval / Ratio (objective/ constant scale)	Unrelated T- test	Related T-test	Pearson's PMCC (R)

Explaining When a Stats Test Will be Used

Helpfully, this can be used in reverse too. Imagine you're asked about the appropriate situation in which to use the Mann Whitney test. Find it in the table and look at which row and column it is in (the answer is when looking for a difference between unrelated data that has been measured at the ordinal level).

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