O - Statistical hypothesis testing

What the Product Moment Correlation Coefficient (PMCC) describe? And how?	• It describes how correlated 2 variables are. • It can take on any value between -1 and +1 inclusively where p = +1 means perfect positive correlation, p = -1 means perfect negative correlation, and p = 0 means no coreelation.
How is a sample normally distributed? What is required for the population?	$\text{If, } X \sim N(\mu, \sigma^2), \text{ then } \overline{X} \sim N(\mu, \frac{\sigma^2}{n})$ This requires the population to also be normally distributed.
What is the test statistic for a normally distributed sample that used during a hypothesis test?	**Key point** $z = \frac{\bar{x} - \mu_0}{\frac{\sigma}{\sqrt{n}}}$, $\bar{x}$ is the mean of the sample, μ_0 is the hypothesised mean of the distribution, σ^2 is the variance of the distribution and n is the sample size.
What is a parameter and a statistic? How are they used? (with example)	• A parameter is a number that describes the entire population. • A statistic is a number taken from a single sample. • You used a statistic to estimate a parameter • Example: the mean of a sample is an estimate of the population mean.