Introducing statistics **(M140)** content listing

Unit 1 *Looking for patterns*	The basic idea of statistical modelling and the modelling diagram Stemplots The shape (skewness, modes) of data sets Median and range
Unit 2 *Prices*	Mean, weighted mean, quartiles, interquartile range Five-figure summary Simple ideas of index numbers UK consumer price indices (CPI, RPI)
Unit 3 *Earnings*	Earnings ratios Percentile and deciles Boxplots Deviations, variance and standard deviation Average Weekly Earnings index and comparing changes in prices and earnings
Unit 4 *Surveys*	Basic ideas of survey sampling Simple random sampling, systematics sampling, general ideas of stratification and clustering, quota sampling Sampling errors
Unit 5 *Relationships*	Relationships, scatterplots, response and explanatory variables Describing relationships Lines and residuals. Least squares regression
Unit 6 *Truancy*	Basic ideas of probability Combining probabilities (addition and multiplication rules) Steps in a hypothesis test The sign test *p*-values and interpreting significance test results
Unit 7 *Factors affecting reading*	The normal distribution One- and two-sample *z*-tests
Unit 8 *Teaching how to read*	Contingency tables. Joint and conditional probabilities The chi-squared test in contingency tables Type 1 and type 2 errors
Unit 9 *Comparing schools*	Causality and association Correlation. Outliers and influential points Confidence intervals and prediction intervals
Unit 10 *Experiments*	Basic ideas of scientific experimentation One- and two-sample t-test (one and two-sided) Matched pairs t-test Calculating confidence intervals
Unit 11 *Testing new drugs*	Drug testing and clinical trials Types of design for trials (group comparative, matched pairs, crossover) Phases of drug trials, post-marketing surveillance
Unit 12 *Review*	Using Minitab to carry out straightforward data analyses