

YEAR 12 - MATHEMATICS

HSC Topic 4 – Data and Summary Statistics

MATHEMATICS ADVANCED

LEARNING PLAN

Learning Intentions Student is able to:	Learning Experiences Implications, considerations and implementations:	Success Criteria I can:	Resources
classify data relating to a single random variable	–	Classify data as qualitative, categorical nominal, qualitative categorical ordinal, quantitative continuous and quantitative discrete.	
organise, interpret and display data into appropriate tabular and/or graphical representations	– Construct a range of displays – compare the suitability of different methods of data presentation in real-world contexts	Organise the appropriate data into range of displays including Pareto charts, cumulative frequency distribution tables or graphs, parallel box-plots and two-way tables	
summarise and interpret grouped and ungrouped data through appropriate graphs and summary statistics	–	Organise and interpret data in grouped and ungrouped displays.	

calculate measures of central tendency and spread and investigate their suitability in real-world contexts and use to compare large datasets	investigate real-world examples from the media illustrating appropriate and inappropriate uses or misuses of measures of central tendency and spread	Define the measures of central tendency as mean, median and mode and measures of spread as range, interquartile range and standard deviation. Understand that the data can be misrepresented in a number of ways in the media and presentations.	
identify outliers and investigate and describe the effect of outliers on summary	- use different approaches for identifying outliers, for example consideration of the distance from the mean or median, or the use of below $Q_1 - 1.5 \times IQR$ and above $Q_3 + 1.5 \times IQR$ as criteria, recognising and justifying when each approach is appropriate. - investigate and recognise the effect of outliers on the mean, median and standard deviation	Use the formula to identify outliers. Interpret the effect of the outlier on the measures of central tendency and spread.	
describe, compare and interpret the distributions of graphical displays and/or numerical datasets and report findings in a systematic and concise manner	Compare and contrast sets of data in a range of displays.	Interpret the data of 2 sets in a given display and comment on a proposed problem to determine the better of the 2 sets based on the data you find.	
Past HSC Questions			

Established Goals (Syllabus Outcomes): MS1-12-3,MS1-12-4, MS1-12-9, MS1-12-10
Estimated Time: 3 Weeks

ASSESSMENT	
Performance Tasks: (Linked to Essential Questions)	Other Evidence: