Year 12 T5
Maths Overview

Statistics and Probability

Learning Outcomes	Elaboration	Textbook
Students should be able to: • understand and use the vocabulary of probability and the probability scale;	Place events in order of 'likelihood' and use appropriate words to identify chance. Understand and use 0 and 1 as the limits of the probability scale.	**7 and 8**
• understand and use estimates or measures of probability from theoretical models (including equally likely outcomes), and from relative frequency;	Know that for equally likely outcomes, the probability of an event is the number of desirable outcomes divided by the number of possible outcomes. Know that if there are six identical beads numbered, 1, 1, 2, 2, 3 and 4, the probability of selecting a bead labelled 1 is 2/6 Recognise situations where probabilities can be based on equally likely outcomes and others where estimates must be based on sufficient experimental evidence and make these estimates; understand and use relative frequency as an estimate of probability.	
• list all outcomes for single events, and for two successive events, in a systematic way and derive related probabilities;	List all the outcomes when tossing two coins, HH, TT, TH, HT. Make a table of all the outcomes when throwing two dice and show the total sums arising.	
• identify different mutually exclusive outcomes and know that the sum of the probabilities of all these outcomes is 1;	Recognise that if the probability of a machine failing is 0.05 then the probability of it not failing is 0.95	
• compare experimental data and theoretical probabilities; and • understand that if they repeat an experiment, they may, and usually will, get different outcomes, and that increasing sample size generally leads to better estimates of probability and population characteristics.	Understand possible outcomes of random trials or experiments; understand that there is a degree of uncertainty about the occurrence of some events, and others are certain or impossible. Know that you do not always get 5 heads in 10 tosses of a 'fair' coin and very occasionally there will be none.	