

KEVICC Key Stage 4 Curriculum Subject: Mathematics			Key Vocabulary and notation.	
Spring Half-Term				
Term: Year 10 Spring Term – Block Two		Topic: Probability One		
What is the essential knowledge from this unit? What do students need to remember and understand?				
	Specification content		Specification notes	
P2	Apply ideas of randomness, fairness, and equally likely events to calculate expected outcomes or multiple future experiments			
Students should be able to: <ul style="list-style-type: none">use lists or tables to find probabilitiesunderstand that experiments rarely give the same results when there is a random process involvedappreciate the 'lack of memory' in a random situation, for example a fair coin is still equally likely to give heads or tails even after five heads in a row.				
P3	Relate relative expected frequencies to theoretical probability, using appropriate language and the 0 – 1 probability scale			
Students should be able to: <ul style="list-style-type: none">understand and use the term relative frequencyconsider differences where they exist between the theoretical probability of an outcome and its relative frequency in a practical situationrecall that an ordinary fair dice is an unbiased dice numbered 1, 2, 3, 4, 5 and 6 with equally likely outcomesestimate probabilities by considering relative frequency.				
P5	<u>Understand that empirical unbiased samples tend towards theoretical probability distributions with increasing sample size</u>			
Students should be able to: <ul style="list-style-type: none">understand that experiments rarely give the same results when there is a random process involvedappreciate the 'lack of memory' in a random situation, for example a fair coin is still equally likely to give heads or tails even after five heads in a rowunderstand that the greater the number of trials in an experiment, the more reliable the results are likely to beunderstand how a relative frequency diagram may show a settling down as sample size increases, enabling an estimate of a probability to be reliably made; and that if an estimate of a probability is required, the relative frequency of the largest number of trials available should be used.				
P6	Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams and tree diagrams			
Students should be able to: <ul style="list-style-type: none">complete tables and/or grids to show outcomes and probabilitiescomplete a tree diagram to show outcomes and probabilities				
P8	<u>Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions</u>	<u>know when to add and when to multiply two or more probabilities</u>		
Students should be able to: <ul style="list-style-type: none">determine when it is appropriate to add probabilitiesdetermine when it is appropriate to multiply probabilitiesunderstand the meaning of independence for eventscalculate probabilities when events are dependentunderstand the implications of with or without replacement problems for the probabilities obtainedcomplete a tree diagram to show outcomes and probabilitiesuse a tree diagram as a method for calculating probabilities for independent or dependent events.				
P9	Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams			
Students should be able to: <ul style="list-style-type: none">understand conditional probabilityunderstand the implications of with or without replacement problems for the probabilities obtained				

Numerator	Two-way
Denominator	tables
Exact value	Venn
Lowest	diagram
common	Frequency
multiple	trees
Simplest form	Universal set
Equally likely	Sample
Outcome	space
Event	Systematic
Complement	Array
Venn	Independent
diagram	events
Intersect	Product
Union	Outcomes
Relative	At least one
frequency	Dependent
Estimate	events
Expectation	Tree diagram
Expected	Conditional
value	probability
Sample	Given
Probability	Show
Chance	Set
Equally likely	Union
Unbiased	Region
Possibilities	And / Or
Mathematical questioning should be designed to unpick the structure of the maths and deepen the student's understanding. When students talk about mathematical concepts, they should develop the vital mathematical language that helps them explain their ideas fully.	
Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.	

<ul style="list-style-type: none"> complete a tree diagram to show outcomes and probabilities use a tree diagram as a method for calculating conditional probabilities 		
What prior learning supports understanding of this content? <ul style="list-style-type: none"> Calculate the probability of a single event. Use the sum of probabilities of an event as 1. Add and subtract fractions and decimals. Multiply and divide a fraction by an integer. Multiply and divide a fraction by a fraction. Change fractions to decimals. Understand and use the language of probability. Understand and use set notation. Draw and interpret Venn diagrams. 	How does this content link to future learning? <ul style="list-style-type: none"> Apply ideas of randomness, fairness, and equally likely events to calculate expected outcomes or multiple future experiments. Understand that empirical unbiased samples tend towards theoretical probability distributions with increasing sample size. Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams and tree diagrams. Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions. 	
Reading: <i>Where in the unit are students supported to read complex academic text?</i> <ul style="list-style-type: none"> Reading and understanding mathematical questions and problems' – teacher input. Decoding complex examination questions - explain what they are asking the student to do' – teacher input. Following instructions to solve problems - break down the tasks – teacher input. Recognising terminology, numbers, and symbols. 	Writing: <i>Independent writing tasks and how they are structured</i> <ul style="list-style-type: none"> Using the correct subject specific terminology for numbers and symbols – examination papers, class books. Responding to questions that ask for an explanation or a reason – examination papers, class books. Self-evaluation, reviewing, reflecting and analysis of own work – class books, personalised learning checklists and analysis. Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc. 	
Key assessments: How will do students review the information learned? End of block assessments. AQA end of block assessments provide a quick progress check at the end of each block of learning to make sure students have understood the content being covered. These are available for both foundation and higher tiers. End of term/year assessments and mock examinations. End of term assessments assessing the students' progress towards targets and provide diagnostic information to modify future teaching. End of year 9 and 10 examinations assessing the students' progress towards targets and provide diagnostic information to modify future teaching. Two mock examinations seasons take place during year 11 using previous years AQA 8300 examination papers. Students to experience the full suite of papers at both Foundation and higher tiers using Non-calculator and Calculator requirements. All examinations will explore the three examination papers at both foundation and higher tiers using non-calculator and calculator requirements. How will feedback be seen? Marked end of block, term assessments and mock examinations. Personalised learning checklists for all assessments identifying strengths and areas of development. Written teacher feedback and marking in compliance with faculty and College Marking Policies. Student responses to marking. Students self-mark using purple pen. Verbal feedback given every lesson from teacher and peers as appropriate. Teacher and student self-assessment of presentation of class books will be completed to ensure written work is of high standard and students are achieving their potential.		