

| KEVICC Key Stage 4 Curriculum Subject: Mathematics   |   |   | Key Vocabulary and notation.  |  |
|--|---|---|---|--|
| Summer Half-Term   |   |   |   |  |
| Term: Year 10 Summer Term – Block Four   |   | Topic: Probability Two – Tree and Venn Diagrams |   |  |
| <b>What is the essential knowledge from this unit?</b><br><b>What do students need to remember and understand?</b>   |   |   |   |  |
|  | Specification content   |   | Specification notes   |  |
| P6   | Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams and tree diagrams   |   |   |  |
| <p>Students should be able to:</p> <ul style="list-style-type: none"><li>complete tables and/or grids to show outcomes and probabilities</li><li>complete a tree diagram to show outcomes and probabilities</li><li>understand that <math>P(A)</math> means the probability of event A</li><li>understand that <math>P(A')</math> means the probability of event <b>not</b> A</li><li>understand that <math>P(A \cup B)</math> means the probability of event A or B or both</li><li>understand that <math>P(A \cap B)</math> means the probability of event A and B</li><li>understand a Venn diagram consisting of a universal set and at most two sets, which may or may not intersect</li><li>shade areas on a Venn diagram involving at most two sets, which may or may not intersect</li><li>solve problems given a Venn diagram</li><li>solve problems, where a Venn diagram approach is a suitable strategy to use but a diagram is not given in the question.</li></ul> |   |   |   |  |
| 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>  |  |
| <p>Students should be able to:</p> <ul style="list-style-type: none"><li>determine when it is appropriate to add probabilities</li><li>determine when it is appropriate to multiply probabilities</li><li>understand the meaning of independence for events</li><li>calculate probabilities when events are dependent</li><li>understand the implications of with or without replacement problems for the probabilities obtained</li><li>complete a tree diagram to show outcomes and probabilities</li><li>use a tree diagram as a method for calculating probabilities for independent or dependent events.</li></ul>  |   |   |   |  |
| P9h  | Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams                    |   |   |  |
| <p>Students should be able to:</p> <ul style="list-style-type: none"><li>understand conditional probability</li><li>understand the implications of with or without replacement problems for the probabilities obtained</li><li>complete a tree diagram to show outcomes and probabilities</li><li>use a tree diagram as a method for calculating conditional probabilities</li><li>use a Venn diagram as a method for calculating conditional probabilities.</li></ul>   |   |   |   |  |
| <b>What prior learning supports understanding of this content?</b> <ul style="list-style-type: none"><li>Calculate the probability of a single event.</li><li>Use the sum of probabilities of an event as 1.</li><li>Add and subtract fractions and decimals.</li><li>Multiply and divide a fraction by an integer.</li><li>Multiply and divide a fraction by a fraction.</li><li>Change fractions to decimals.</li><li>Understand and use the language of probability.</li><li>Understand and use set notation.</li><li>Draw and interpret Venn diagrams.</li></ul>   |   |   | <b>How does this content link to future learning?</b> <ul style="list-style-type: none"><li>Consolidate all aspects of probability including using two-way tables, Grids, Venn diagrams and Tree diagrams from key stage 3 and 4.</li><li>Revise and explore subject content through examination questions and in context.</li></ul>  |  |
| <b>Reading:</b> <i>Where in the unit are students supported to read complex academic text?</i> <ul style="list-style-type: none"><li>Reading and understanding mathematical questions and problems' – teacher input.</li><li>Decoding complex examination questions - explain what they are asking the student to do' – teacher input.</li><li>Following instructions to solve problems - break down the tasks – teacher input.</li><li>Recognising terminology, numbers, and symbols.</li></ul>   |   |   | <b>Writing:</b> <i>Independent writing tasks and how they are structured</i> <ul style="list-style-type: none"><li>Using the correct subject specific terminology for numbers and symbols – examination papers, class books.</li><li>Responding to questions that ask for an explanation or a reason – examination papers, class books.</li><li>Self-evaluation, reviewing, reflecting and analysis of own work – class books, personalised learning checklists and analysis.</li><li>Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.</li></ul> |  |

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|---|---------------|
| 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.   |               |

**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.