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**Knowledge Rich Curriculum Plan**

Year 10 Higher+ Probability



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this…* | **Assessment** |
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| **To learn how to draw and use tree diagrams for independent events** | * Students will know how to show given information on a probability tree diagram. * Students will know how to complete probabilities using both decimals and fractions to represent probabilities * Students will know construct a probability tree for multiple events * Students will know how to use a probability tree diagram to represent outcomes of combined independent events (with replacement) * Students will know how to use tree diagrams to calculate the probability of two combined independent events by multiplying across the branches (this can either be fractions or decimals) | **Probability** - the extent to which an event is likely to occur, measured by the ratio of the favourable cases to the whole number of cases possible.  **Independent** – not subject to control by anything else  **Independent Events** – Two events are independent if the occurrence of one event does not affect the chances of the occurrence of the other event | * Students will need to know that the probability of all possible outcomes for an event add to 1 * Students will need to know how to multiply decimals * Students will need to know how to multiply fractions |  |
| **To learn how to solve conditional probability problems using tree diagrams** | * Students will understand how and why the outcome of one event can impact the outcome of a subsequent event * Students will know how to complete and construct probability trees for dependent events * Students will know how to use probability trees to calculate the probabilities of combined events for dependent events | **Dependent** – determined by  **Conditional/ Dependent Events** – events whose outcomes rely on that of another event | * Students will need to know how to multiply decimals * Students will need to know how to multiply fractions |  |
| **To learn how to solve algebraic tree diagram problems** | * To learn how to form and solve quadratic equations to solve probability problems |  | * Students will need to know how to solve quadratic equations |  |
| **To learn how to draw and use Venn diagrams to calculate probabilities** | * Students will know how to put information into a Venn diagram and use it to determine probabilities * Students will know how to construct appropriate Venn diagrams to sort information * Students will know how to interpret a Venn diagram to find probabilities | **Venn Diagram** - a diagram representing mathematical or logical sets as circles within an enclosing rectangle (the universal set), common elements of the sets being represented by intersections of the circles.  **Universal Set** - a set which contains all objects, including itself  **Intersection** – A point, area or line that is common to two or more things. For a Venn diagram the intersection is the overlap between the two circles | * Students should know how to sort information into a simple Venn diagram |  |
| **To learn how to interpret and use set notation** | * Students will know how to use very simple set notation to describe parts of the Venn diagram e.g. (A), (B), (A'), (B') * Students will know how to use union (A Ս B) and intersection (A ∩ B) notation * Students will know how to find probabilities using union and intersection notation | **Union** - The set made by combining the elements of two sets. So the union of sets A and B is the set of elements in A, or B, or both. | Students should know how to sort information into a Venn diagram |  |