The Sutton Academy

Knowledge Rich Curriculum Plan

Year 10 Foundation – Probability

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this…*	Assessment
To learn how to describe and represent probabilities	• Students will know how to represent an approximate probability on a probability scale. • Students will know how to distinguish between events which are impossible, unlikely, even chance, likely, and certain to occur. Students will know that impossible is represented by 0, even chance by 0.5 and certain by 1. • Students will know how to accurately represent probabilities on a 0-1 probability scale. For example the probability of throwing a head on a fair coin is 0.5 and is represented in the middle of the number line. • Students will know how to write probabilities in words or fractions, decimals and percentages; for example unlikely can be represented as 25%, 0.25 and ¼ • Students will know how to find the probability of an event • Students will know the probability of an event is $\frac{number\ of\ events}{number\ of\ possible\ outcomes}$	**Probability** - the extent to which an event is likely to occur, often expressed as a fraction or decimal.	• Students will need to know how to order fractions • Students will need to know how to order decimals	
To learn how to complete probability tables and find expected frequency	• Students will know how to calculate a missing probability from a list or table by adding and subtracting from 1. • Students will know how to calculate a missing probability from a list or table by adding and subtracting from 1 where algebra is used or the probability of one event is two/three times the probability of another • Students will know how to use relative frequency to estimate the number of times an event will occur, for both experimental and theoretical probabilities. • Students will know how to use the 'OR' rule to determine the probability of one or more outcomes and will know how to use this to find an estimate for the number of times an event occurs	**Expected Frequency –** the number of times an even may occur on average given a number of attempts.	• Students will need to know how to add decimals • Students will need to know how to subtract a decimal from 1 • Students will need to know how to multiply a decimal by an integer	
To learn how to list all the outcomes for events systematically	• Students will know how to list all of the outcomes for events systematically to find probabilities • Students will know how to construct and use sample space diagrams to find probabilities	**Systematically –** according to a fixed plan or system; methodically.	• Students should know how to list the possible outcomes for events systematically	
To learn how to draw, complete and use two-way tables	• Students will know how to complete a two-way table with given information. • Students will know how to design and complete a two-way table from information. • Students will know how to calculate probabilities from a two-way table.	**Two-Way Table –** a way to display frequencies or relative frequencies for two categorical variables	• Students need to know how to add and subtract using the column method	
To learn how to complete and use a frequency tree to find probabilities	• Students will know how to complete a partially completed frequency tree and use it to find a frequency and/or calculate probabilities • Students will know how to complete a frequency tree from given information and use it to find a frequency and calculate probabilities	**Frequency Tree –** a diagram used to show how a group of people/things can be broken up into certain categories	• Students will need to know how to find fractions of amounts • Students will need to know how to find percentages of amounts	

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To learn how to draw and use a tree diagram 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)	**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 create and use a Venn diagram to determine 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. **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	