



The Sutton Academy

# Knowledge Rich Curriculum Plan

Year 8 Core – Probability

Lesson/Learning Sequence	Intended Knowledge: <i>Students will know that...</i>	Tiered Vocabulary	Prior Knowledge: <i>In order to know this, students need to already know that...</i>	Assessment
To learn how to determine the probability of an event.	<ul style="list-style-type: none"> <li>Students will know how to represent an approximate probability on a probability scale.</li> <li>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.</li> <li>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.</li> <li>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 <math>\frac{1}{4}</math>.</li> <li>Students will know how to find the probability of an event.</li> <li>Students will know how to find probabilities using the 'OR' rule by adding simple probabilities.</li> <li>Students will know that to calculate the probability of an event not occurring you need to subtract the given probabilities from 1.</li> <li>Students will know that all probabilities add to give 1 or 100%.</li> </ul>	<p><b>Probability</b> - 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.</p>	<ul style="list-style-type: none"> <li>Students need to know how to order fractions</li> <li>Students need to know how to order decimals</li> <li>Students need to know how to write one amount as a fraction of another.</li> </ul>	Mini-Assessment 14
To learn how to complete probability tables.	<ul style="list-style-type: none"> <li>Students will know how to calculate a missing probability from a list or table by adding and subtracting from 1.</li> <li>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.</li> </ul>		<ul style="list-style-type: none"> <li>Students need to know how to add decimals.</li> <li>Students need to know how to subtract a decimal from 1.</li> </ul>	Mini-Assessment 14
To learn how to estimate the amounts of times an event will happen.	<ul style="list-style-type: none"> <li>Students will know how to use relative frequency to estimate the number of times an event will occur, for both experimental and theoretical probabilities.</li> <li>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.</li> </ul>		<ul style="list-style-type: none"> <li>Students need to know how to multiply a decimal by an integer.</li> </ul>	Mini-Assessment 14
To learn how to list all the outcomes for events and use sample space diagrams.	<ul style="list-style-type: none"> <li>Students will know how to list all of the outcomes for events systematically to find probabilities.</li> <li>Students will know how to construct and use sample space diagrams to find probabilities.</li> </ul>	<p><b>Systematically</b> – according to a fixed plan or system; methodically.</p>	<ul style="list-style-type: none"> <li>Students need to know how to list the possible outcomes for events systematically.</li> </ul>	Mini-Assessment 14
To learn how to draw, complete and use two-way tables.	<ul style="list-style-type: none"> <li>Students will know how to complete a two-way table with given information.</li> <li>Students will know how to design and complete a two-way table from information.</li> <li>Students will know how to calculate probabilities from a two-way table.</li> </ul>	<p><b>Two-Way Table</b> – a way to display frequencies or relative frequencies for two categorical variables</p>	<ul style="list-style-type: none"> <li>Students need to know how to add and subtract using the column method.</li> </ul>	Mini-Assessment 14
To learn how to complete and use a frequency tree to find probabilities.	<ul style="list-style-type: none"> <li>Students will know how to complete a partially completed frequency tree and use it to find a frequency and/or calculate probabilities.</li> <li>Students will know how to complete a frequency tree from given information and use it to find a frequency and calculate probabilities.</li> </ul> <p><b>Opportunity for challenge:</b></p> <ul style="list-style-type: none"> <li>Students will know to complete frequency trees for more complex problems.</li> </ul>	<p><b>Frequency Tree</b> – a diagram used to show how a group of people/things can be broken up into certain categories</p>	<ul style="list-style-type: none"> <li>Students need to know how to find fractions of amounts.</li> <li>Students need to know how to find percentages of amounts.</li> </ul>	Mini-Assessment 14