

## OPPORTUNITIES FOR CULTURAL CAPITAL IN MATHEMATICS

	Term 1	Term 2	Term 3
Year 7	<p>'Who invented the zero?' when looking at place value</p> <p>Millionaires and Billionaires, what are they? How much money is it and exactly how different are they?</p>	<p>Introduction to Algebra – al-jabr – looking at the Arabic roots of the term and the work of Muhammad ibn Musa al-Khwarizmi</p>	<p>The origins of Pi, where did it originate? Is it still used today?</p>
Year 8	<p>Euclid and Euclidean Geometry, etymology of the word angle</p> <p>Where 360 degrees comes from (Babylonians)</p>	<p>Famous Formulae that changed the world</p> <p>The history of Katherine Johnson and how she used formulae to win a presidential medal of freedom and helped pioneer the use of computers at NASA.</p>	<p>Bad statistics in journalism</p> <p>Data science of sports (Moneyball)</p> <p>World Series: The sports data pioneer who spotted baseball's big fix of 1919.</p>
Year 9	<p>Pythagoras' Theorem, history and applications beyond the classroom.</p>	<p>The roots of trigonometry, why did it come about and what are its uses?</p> <p>Is trigonometry still used today?</p>	<p>The probability of winning the national lottery.</p> <p>Code breaking, ciphers and how they helped shorten the 2<sup>nd</sup> world war.</p>
Year 10	<p>Compound and simple interest, touching on mortgages and financial graphs. Links to the stock market.</p> <p>Scatter graphs highlighting the dangers of linking correlation and causation.</p>	<p>The brachistochrone problem - Find the shape of the curve down which a bead sliding from rest and accelerated by gravity will slip (without friction) from one point to another in the least time.</p>	<p>Probability is only as good as the data it has come from. Examples based on survivorship bias, gambling and the 'baltimore stock broker'.</p>
Year 11	<p>Etymology, origin and meaning of the word 'bearing'. Why do bearings have 3 digits and are they still used today?</p>	<p>The use of algebra in computing. Every video game relies on a whole series of functions to determine how fast the car will go/how much damage a character can take and how your character may improve with different traits etc.</p>	<p>How are populations of different species measured without counting each individual?</p> <p>Using wind vectors to map airflow for the weather forecast.</p>