

## Curriculum maps with Christian and school ethos links

Subject: Mathematics

Year: 12

Topics and links	Autumn Term		Spring Term		Summer Term	
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	<b>Pure Mathematics</b> Algebraic expressions Quadratics Cubics Curve Sketching Simultaneous equations Inequalities Straight line graphs	<b>Pure Mathematics</b> Circles Binomial expansion Trigonometry Exponentials and logarithms Differentiation	<b>Pure Mathematics</b> Differentiation Integration Vectors  Consolidation of first 3 units	<b>Statistics</b> Data collection Representation of data Measures of location and spread Correlation and regression Probability Statistical distributions Hypothesis testing	<b>Mechanics</b> Modelling in mechanics Kinematics graphs Kinematic equations Variable acceleration and calculus Forces	<b>Pure Mathematics</b> Sequences and series Radians Proof by contradiction Algebraic fractions Partial fractions Functions
<b>Links with Christian beliefs</b>	<p>Some quotes “Christianity has been a major influence on the mathematical sciences. There is a widespread belief that Christianity and mathematics were on opposing sides. This, however, oversimplifies things and gives a false impression of the development of the mathematics. For example four men who perhaps did as much as any to revolutionise mathematics in the 16<sup>th</sup> and 17<sup>th</sup> Centuries, Copernicus, Kepler, Galileo and Newton, were all deeply religious Christians who in many ways saw their scientific work as a religious undertaking.</p> <p>Pythagoras developed a world-view in which mathematics and religion were completely linked. Pythagoras saw the beauty in the theory of numbers and he saw this mathematical beauty translated into musical beauty. From there he developed a view of the world based on numbers and shapes. He believed that the Earth was a sphere, not for any experimental reason, but simply because he believed that the sphere was the most perfect shape, so the Earth had to be a sphere. He also believed that the Earth was not at the centre of the universe but that the Earth moved.</p> <p>The argument is that mathematical laws, in order to be properly relied upon, must have attributes which indicate an origin in God. They are true everywhere (omnipresent), true always (eternal), cannot be defied or defeated (omnipotent), and are rational and have language characteristics (which makes them personal).”</p>					
<b>Links with Sexey’s Seven ethos and spiritual development opportunities</b>	<ol style="list-style-type: none"> <li>1. Courage – Becoming confident in new mathematical skills. Being brave enough to answer and ask questions.</li> <li>2. Forgiveness – Working in pairs, small groups or as a whole class and accepting others’ mistakes. Not blaming others for work that goes wrong.</li> <li>3. Honesty – Being able to admit to mistakes. Being fair when working with others in pairs, small groups or as a whole class. Being truthful about mistakes made.</li> <li>4. Kindness – Working in pairs, small groups or as part of a whole class and helping others when they find things difficult.</li> <li>5. Respect – Learning how to behave in a Maths classroom. Showing consideration of others in the classroom.</li> <li>6. Empathy – Understanding that one’s peers are all different. Understanding other’s difficulties with mathematics.</li> <li>7. Resilience – Completing tasks even when they are new and/or difficult. Recovering quickly from setbacks.</li> </ol>					

## Curriculum maps with Christian and school ethos links

Subject: Mathematics

Year: 13

Topics and links	Autumn Term		Spring Term		Summer Term	
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	<b>Pure Mathematics</b> Trigonometry Parametric equations Binomial expansion Exponentials and logarithms Differentiation	<b>Pure Mathematics</b> Differentiation Integration Differential equations Numerical methods Vectors  Consolidation of Year 12 Unit 6 and Year 13 units 1 and 2.	<b>Statistics</b> Correlation and Regression Probability Normal distributions  <b>Mechanics</b> Kinematics in 2 dimensions	<b>Mechanics</b> Dynamics Moments  Revision and exam paper practise.	Revision and exam paper practise.	Revision and exam paper practise.
<b>Links with Christian beliefs</b>	<p>Some quotes “Christianity has been a major influence on the mathematical sciences. There is a widespread belief that Christianity and mathematics were on opposing sides. This, however, oversimplifies things and gives a false impression of the development of the mathematics. For example four men who perhaps did as much as any to revolutionise mathematics in the 16<sup>th</sup> and 17<sup>th</sup> Centuries, Copernicus, Kepler, Galileo and Newton, were all deeply religious Christians who in many ways saw their scientific work as a religious undertaking.</p> <p>Pythagoras developed a world-view in which mathematics and religion were completely linked. Pythagoras saw the beauty in the theory of numbers and he saw this mathematical beauty translated into musical beauty. From there he developed a view of the world based on numbers and shapes. He believed that the Earth was a sphere, not for any experimental reason, but simply because he believed that the sphere was the most perfect shape, so the Earth had to be a sphere. He also believed that the Earth was not at the centre of the universe but that the Earth moved.</p> <p>The argument is that mathematical laws, in order to be properly relied upon, must have attributes which indicate an origin in God. They are true everywhere (omnipresent), true always (eternal), cannot be defied or defeated (omnipotent), and are rational and have language characteristics (which makes them personal).”</p>					
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