YEAR 11 CURRICULUM INFORMATION – MATHEMATICS **HIGHER**		
	Autumn 1	Autumn 2
What will students be learning?	• Equations and graphs- simultaneous equations graphically, inequalities graphically, quadratic functions, solving quadratics graphically. • Circle theorems- Radii, curves, tangents, angles in circles, applying circle theorems.	• More algebra- rearranging formulae, algebraic fractions, surds, solving algebraic fraction equations, functions, proof. • Vectors- Vectors and vector notation, vector arithmetic, parallel vectors and colinear points, geometric problems.
How will students be assessed?	Milestone assessment- differentiated into 2 levels (foundation, and higher)	Milestone assessment- differentiated into 2 levels (foundation and higher)
Literacy – What keywords will be taught?	Sketch, estimate, quadratic, cubic, function, factorising, simultaneous equation, graphical, algebraic, Radius, centre, tangent, circumference, diameter, gradient, perpendicular, reciprocal, coordinate, equation, substitution, chord, triangle, isosceles, angles, degrees, cyclic quadrilateral, alternate, segment, semicircle, arc, theorem	Rationalise, denominator, surd, rational, irrational, fraction, equation, rearrange, subject, proof, function notation, inverse, evaluate, Vector, direction, magnitude, scalar, multiple, parallel, collinear, proof, ratio, column vector
What employability skills are being developed?	The specific value of maths as a required or preferred subject for particular careers e.g. • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians **Employability skills** Interpreting data and justifying validity Explaining and justifying to another person Being able to approximate calculations mentally. Logical reasoning and problem solving skills	The specific value of maths as a required or preferred subject for particular careers e.g. • Engineers and engineering technicians • Surveyors and surveying technicians • Systems analysts • Actuaries • Accountants • Operational researchers • Chemists • Software engineers • Statisticians **Employability skills** Interpreting data and justifying validity Explaining and justifying to another person Being able to approximate calculations mentally. Logical reasoning and problem solving skills

	Support your opinion with historical data or trends. Use mathematics to help develop solutions to practical problems Supports productions schedules alongside budget Critical thinking Analytical thinking Communication	Support your opinion with historical data or trends. Use mathematics to help develop solutions to practical problems Supports productions schedules alongside budget Critical thinking Analytical thinking Communication
Wider Curriculum Links?	**Art and Design and Maths** Multicultural designs like rangoli patterns Ratio is used to mix paints to make secondary colours (primary colours are red, yellow and blue. **English and Maths** Spelling mathematical vocabulary and use in correct context/sentence. To reason or explain mathematical thinking and to justify their conclusion. Solving comprehension and extracting key information. **Design and technology** Reading and using scales Proportion and ratio in recipes Nutritional information **Geography and maths** Colleting and representing data Grid references, coordinates and bearing Using scale on ordnance survey maps **Computing and Maths** Angles and direction using apps/programming. Information using excel **Foreign language and Maths** Numbers used calculations/ times tables/time **Music and Maths** Time and speed represented by tempo, chord progression , form and meter. Equivalent fractions using musical notation eg a semibreve last for four crochet beats. A minim last for two crochet beats, so a minim is half a semibreve.	

	History and Maths Historical timelines as a key aspects of maths Interpreting graphs and data **Physical education and maths** Times distance and speed Averages to discuss athletes performance.
What useful websites are there for this topic?	Mymaths (lessons, homework and games): www.mymaths.co.uk BBC Bitesize (revision and tests): www.bbc.co.uk/education/subjects/zqhs34j Subtangent (revision, games and investigations): www.subtangent.com/maths/index.php Nrich (games and puzzles): www.nrich.maths.org.uk/public/index.php Counton (lots of games): www.counton.org/games/ Sums (games): www.sums.co.uk/playground.htm Mathsapps (find apple maths apps): www.mathsapps.com/ Brainbashers (games and puzzles): www.brainbashers.com/puzzles.asp Funbrain (puzzles & games): www.funbrain.com/ Hellam (puzzles & games): www.mathematics.hellam.net/ www.mathsgenie.co.uk www.mathsbot.com •
What wider reading could be done for this topic?	• Mastering Algebra - An Introduction: Over 2,000 Solved Problems by Dan Hamilton • How to lie with statistics by Darrell Huff • Mindful Math by Ann McNair • Mathematics A mind for numbers: how to excel at maths and science (even if you flunked algebra) • Barbara Oakley The Music of the Primes • Marcus du Sautoy The man who loved only numbers • Paul Hoffman The girl with a mind for math: • The story of Raye Montague Julia Finley Mosca • All shapes and sizes Kjartan Poskitt
What else can students be doing independently to develop their understanding of this topic?	The following workbooks and revision guides are available for you to purchase on Parentpay: • Key Stage Four Mathematics Higher Level: The Workbook (includes answers) by Pearson • Key Stage Four Mathematics Foundation Level: The Workbook (includes answers) by Pearson • Key Stage Four Mathematics Higher Level: The Study Guide by CGP by Pearson

	• Key Stage Four Mathematics Foundation Level: The Study Guide by CGP • MathsWatch Disc You can also access additional Maths resources via the school website Additional tasks are also on mymaths Additional revision past papers including model solution are also available on the school website