FAIRFAX
SINCERITAS LABORIS

| YEAR 10 CURRICULUM INFORMATION – MATHEMATICS **HIGHER** | | |
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| | Spring 1 | Spring 2 |
| What will students be learning? | • Probability- combined events, mutually exclusive events, experimental probability, tree diagrams, conditional probability, venn diagrams.<br>• Multiplicative reasoning- growth and decay, compound measures, ratio and proportion. | • Similarity and congruence- Congruence, Geometric proof, similarity, similarity in 3D shapes.<br>• More trigonometry- trigonometric graphs, sine and cosine rule, area of a triangle, 3D Pythagoras and trigonometry. |
| How will students be assessed? | 1 topic-based checkpoint<br>1 mixed topic checkpoint | 1 mixed topic checkpoint<br>1 topic-based checkpoint |
| Literacy – What keywords will be taught? | Probability, mutually exclusive, conditional, tree diagrams, sample space, outcomes, theoretical, relative frequency, Venn diagram, fairness, experimental,<br>Ration, proportion, best value, unitary, proportional change, compound measure, density, mass, volume, speed, distance, time, density, mass, volume, pressure, acceleration, velocity, inverse, direct, constant of proportionality | Congruence, side, angle, compass, construction, shape, volume, length, area, volume, scale factor, enlargement, similar, perimeter, frustum, Ratio, Subject, Sine, Cosine, Tangent, Adjacent, Hypotenuse, Opposite, Inverse, Period, Magnitude |
| What employability skills are being developed? | The specific value of maths as a required or preferred subject for particular careers e.g.<br>• Engineers and engineering technicians<br>• Surveyors and surveying technicians<br>• Systems analysts<br>• Actuaries<br>• Accountants<br>• Operational researchers<br>• Chemists<br>• Software engineers<br>• Statisticians<br><br>**Employability skills**<br>Interpreting data and justifying validity<br>Explaining and justifying to another person<br>Being able to approximate calculations mentally.<br>Logical reasoning and problem solving skills | The specific value of maths as a required or preferred subject for particular careers e.g.<br>• Engineers and engineering technicians<br>• Surveyors and surveying technicians<br>• Systems analysts<br>• Actuaries<br>• Accountants<br>• Operational researchers<br>• Chemists<br>• Software engineers<br>• Statisticians<br><br>**Employability skills**<br>Interpreting data and justifying validity<br>Explaining and justifying to another person<br>Being able to approximate calculations mentally.<br>Logical reasoning and problem solving skills |

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

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| | History and Maths<br>Historical timelines as a key aspects of maths<br>Interpreting graphs and data<br><br>Physical education and maths<br>Times distance and speed<br>Averages to discuss athletes performance. |
| What useful websites are there for this topic? | Mymaths (lessons, homework and games):<br>www.mymaths.co.uk BBC Bitesize (revision and tests):<br>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):<br>www.counton.org/games/ Sums (games):<br>www.sums.co.uk/playground.htm Mathsapps (find apple maths apps):<br>www.mathsapps.com/ Brainbashers (games and puzzles):<br>www.brainbashers.com/puzzles.asp Funbrain (puzzles & games):<br>www.funbrain.com/ Hellam (puzzles & games):<br>www.mathematics.hellam.net/<br>www.mathsgenie.co.uk<br>www.mathsbot.com<br>• |
| What wider reading could be done for this topic? | • Mastering Algebra - An Introduction: Over 2,000 Solved Problems by Dan Hamilton<br>• How to lie with statistics by Darrell Huff<br>• Mindful Math by Ann McNair<br>• Mathematics A mind for numbers: how to excel at maths and science (even if you flunked algebra)<br>• Barbara Oakley The Music of the Primes<br>• Marcus du Sautoy The man who loved only numbers<br>• Paul Hoffman The girl with a mind for math:<br>• The story of Raye Montague Julia Finley Mosca<br>• 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:<br><br>• REVISE Edexcel GCSE (9-1) Mathematics Foundation Revision Guide<br>• REVISE Edexcel GCSE (9-1) Mathematics Foundation Revision Workbook<br>• REVISE Edexcel GCSE (9-1) Mathematics Higher Revision Guide |

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| | • REVISE Edexcel GCSE (9-1) Mathematics Higher Revision Workbook<br><br>You can also access additional Maths resources via the school website.<br>Additional tasks are also available on www.sparxmaths.com |