

Curriculum Plan

Department/subject: Mathematics - Year 10 Summer Term

Our Vision: **We take opportunities and aspire to excellence**

Our Intent:

- All students will experience a curriculum richness, breadth and depth
- The curriculum equips every student with the knowledge and skills for the future in our local area and beyond
- The curriculum builds on prior knowledge and creates a ‘web of knowledge’
- Gaps in knowledge and skills are identified and addressed quickly

Year	Summer 1	Summer 2
Knowledge to be taught	<ul style="list-style-type: none"> <li>• Two way tables, pie charts, averages from a list and tale, time series graphs, scatter graphs, lines of best fit.</li> <li>• Understand populations and samples</li> <li>• Primary and secondary data</li> <li>• Construct and interpret frequency tables and frequency polygons construct and interpret line and bar charts, criticise charts and graphs.</li> <li>• Stem and leaf diagrams .</li> <li>• Compare distributions using charts and measures.</li> <li>• Extrapolation</li> <li>• Higher only – construct a stratified sample, construct and interpret histograms, cumulative frequency charts, boxplots.</li> </ul>	<ul style="list-style-type: none"> <li>• Non-calculator methods – four operations with all types of number, rounding to decimal places and significant figures, estimating answers to calculations, exact answers, limits of accuracy, number sense, financial problems, multi-step problems.</li> <li>• Higher only: Rational and Irrational Numbers, using and calculating with surds, upper and lower bounds,</li> <li>• Types of number and sequences – difference between factors and multiples, products of primes, HC, LCM, nth term of a linear sequence, arithmetic and geometric sequences, explore other sequences.</li> <li>• Higher only – sequences involving surds and nth term for a quadratic sequence.</li> <li>• Indices and Roots – square and cube numbers, powers of ten, standard form, adding and subtracting indices, calculate higher powers and roots, zero and negative indices, powers of powers.</li> <li>• Higher only – fractional indices</li> </ul>

Key Words	Population, sample, representative, biased, random, stratified, primary, secondary, frequency, polygon, midpoint, class, interval, angle, sector, proportion, scale, mean median, mode, range, average, cumulative, interquartile range, quartile, correlation.	Credit, debit, profit, loss, perimeter, volume, area, reciprocal, improper, sine, cosine, tangent, exact, integer recurring, terminating, root, surd, factors, rationalise, approximate, error interval, sum, product.
Links to prior knowledge	Students will revisit prior knowledge such as: Two way tables, pie charts, averages from a list and tale, time series graphs, scatter graphs, lines of best fit.	Students will revisit prior knowledge such as: four operations with all types of number, rounding to decimal places and significant figures, estimating answers to calculations, difference between factors and multiples, products of primes, HC, LCM, nth term of a linear sequence, square and cube numbers, powers of ten, standard form, adding and subtracting indices.
How knowledge is assessed	<p>Knowledge is assessed through both a formative and a summative approach. Teachers will use some of the following:</p> <ul style="list-style-type: none"> <li>● Baseline assessments – These are completed at the end of each half term on the topics that are to be taught the following term to assess students prior knowledge.</li> <li>● Retrieval Starter questions – Students are expected to complete their retrieval starter questions through Dr Frost Maths at the beginning of every lesson (those without ipad do them into their books)</li> <li>● Retrieval Quizzes - Retrieval quizzes recap on knowledge and content taught in the previous term in order to ascertain if knowledge has been retained. Generally the quizzes are self marked as the teacher goes through the answers. They will receive a Medal and Mission statement where they</li> </ul>	<p>Knowledge is assessed through both a formative and a summative approach. Teachers will use some of the following:</p> <ul style="list-style-type: none"> <li>● Quizzes</li> <li>● Retrieval Starter questions</li> <li>● Teacher questioning throughout the lessons</li> <li>● Mini white boards</li> <li>● True or false activities</li> <li>● Student’s discussion and presentations</li> <li>● Hegarty Maths</li> <li>● Dr Frost Maths</li> <li>● Sparx Maths for Home learning</li> <li>● In Addition to the regular retrieval quizzes, at the end of every half term there will be a class test. Teachers will mark the student’s assessments and provide them with a question level analysis (QLA) sheet. This will identify Red, Amber and Green topics and students will be given time to work on their individual areas for development and will be expected to continue this at home</li> </ul>

	<p>will be given the opportunity to have a go at similar questions to the one they got wrong.</p> <ul style="list-style-type: none"> <li>• Sparx Maths Homework - Students will be set 1 hour of homework a week through Sparx Maths. This will consist of tasks linked to current content, consolidations tasks and where appropriate times tables challenges.</li> <li>• Teachers use in class strategies and approaches which may include, no hands up questioning throughout the lessons, show me mini white boards, True or false activities, exit tickets, student's discussion and presentations, card sort activities, reasoning and problem solving tasks</li> </ul>	
<p>How gaps will be addressed</p>	<ul style="list-style-type: none"> <li>• Therapy lessons will take place after each end of term assessment, this could be whole class therapy and/or individual therapy which will allow students to address their individual areas for development and for teachers to pick up on any common mistakes/misconception using their QLA – Red/Amber/Green Sheets.</li> <li>• Students are encouraged to take responsibility for their own learning, students will be expected to catch up on any work from missed lessons, where appropriate resources are uploaded to google classrooms the morning of the lesson. If a student is finding a topic challenging, we encourage them to carry out some independent work on one of our online learning platforms and/or to speak to their teacher at the earliest opportunity.</li> </ul>	<ul style="list-style-type: none"> <li>• Therapy lessons will take place after each end of half term assessment, this could be whole class therapy and/or individual therapy which will allow students to address their individual areas for development and for teachers to pick up on any common mistakes/misconception using their QLA – Red/Amber/Green Sheets.</li> <li>• Students are encouraged to take responsibility for their own learning, students will be expected to catch up on any work from missed lessons, , where appropriate resources are uploaded to google classrooms the morning of the lesson. If a student is finding a topic challenging, we encourage them to carry out some independent work on one of our online learning platforms and/or to speak to their teacher at the earliest opportunity.</li> </ul>

	<ul style="list-style-type: none"> <li>We run a homework club that students are encouraged to attend to get support with their home learning or any of the concept in lessons they may be finding difficult.</li> </ul>	<ul style="list-style-type: none"> <li>We run a homework club that students are encouraged to attend to get support with their home learning or any of the concept in lessons they may be finding difficult.</li> </ul>
Cultural capital lessons	<ul style="list-style-type: none"> <li>Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills.</li> <li>Links to 'real life' maths will be made to give concept to mathematical skills.</li> <li>We will have overarching 'Big questions' to each lesson thinking about the bigger picture of the lesson.</li> <li>Some students will be entered for the UKMT maths challenge and the HFL challenges throughout the year.</li> </ul>	<ul style="list-style-type: none"> <li>Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills.</li> <li>Links to 'real life' maths will be made to give concept to mathematical skills.</li> <li>We will have overarching 'Big questions' to each lesson thinking about the bigger picture of the lesson.</li> <li>Some students will be entered for the UKMT maths challenge and the HFL challenges throughout the year.</li> </ul>