

Curriculum Plan

Department/subject: Mathematics - Year 9 Autumn 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	Autumn 1	Autumn 2
Knowledge to be taught	<ul style="list-style-type: none"> ● Interpret straight line graphs ● Find and use the equation of a straight line ● Reduce equations to the form ● Compare to linear sequences and finding the rule for the nth term ● Forming and solving equations and inequalities ● Revisit and extend to equations and inequalities with unknowns on both side using all previous contexts: angles, probability, area etc. ● Change the subject of a formula ● Testing conjectures ● Additional Higher Content - Solve a pair of simultaneous equations using graphical methods, change the subject of a complex formula, explore the gradients of perpendicular lines 	<ul style="list-style-type: none"> ● Understand the language of faces, edges and vertices of 3D shapes ● Know the names of common prisms and non-prisms ● Identify 2-D shapes within 3-D shapes ● Work out the volume and surface area of cuboids and cylinders ● Work out the volume of any prism ● Work out missing lengths given area and/or volume ● Constructions and congruency ● Construct 3-D shapes from nets, and construct the net of a given 3-D shape ● Construct and use scale drawings ● Construct perpendiculars and bisectors ● Understand congruency ● Exploring congruency via construction ● Additional Higher Content - explore volume of cones, spheres and complex shapes, work out the surface area of any prism, explore the locus of a path
Key Words	Straight Lines, vertical, horizontal, y-intercept, gradient, co-ordinate, equations, solve, solution, inverse operation, inequality, sequence, term to term rule, nth term	2D shapes, 3D shapes, prisms, pyramids, nets, volume, surface area, cross section, construction, congruency, scale drawings, loci

<p>Links to prior knowledge</p>	<p>Link equations of graphs to solving equations (Y8 Autumn Term 1) Revisit key topics through equations (Y8 Spring Term 1) Review use of brackets (Y8 Spring Term 1) Review geometric properties and rules (Y7 Summer Term 1)</p>	<p>Revisit rounding to nearest integer, decimal places, significant figures (Y7 Autumn Term 2) Revisit unit conversions, including area and volume units (Year 8 Summer Term 1)</p>
<p>How knowledge is assessed</p>	<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"> ● 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. ● 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) ● 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 will be given the opportunity to have a go at similar questions to the one they got wrong. ● Sparx Maths Homework - Students will be set 1hour of homework a week through Sparx Maths. This will consist of tasks linked to current content, consolidations tasks and where appropriate times tables challenges. ● 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 	<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"> ● Quizzes ● Retrieval Starter questions ● Teacher questioning throughout the lessons ● Mini white boards ● True or false activities ● Student’s discussion and presentations ● Hegarty Maths ● Dr Frost Maths ● Sparx Maths for Home learning ● 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

	<p>tickets, student’s discussion and presentations, card sort activities, reasoning and problem solving tasks</p>	
<p>How gaps will be addressed</p>	<ul style="list-style-type: none"> • 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. • 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. • 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. 	<ul style="list-style-type: none"> • 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. • 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. • 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.
<p>Cultural capital lessons</p>	<ul style="list-style-type: none"> • Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills. • Links to ‘real life’ maths will be made to give concept to mathematical skills. • We will have overarching ‘Big questions’ to each lesson thinking about the bigger picture of the lesson. 	<ul style="list-style-type: none"> • Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills. • Links to ‘real life’ maths will be made to give concept to mathematical skills. • We will have overarching ‘Big questions’ to each lesson thinking about the bigger picture of the lesson.



	<ul style="list-style-type: none">• Some students will be entered for the UKMT maths challenge and the HFL challenges throughout the year.	<ul style="list-style-type: none">• Some students will be entered for the UKMT maths challenge and the HFL challenges throughout the year.
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