

Mathematics Year 7 Curriculum Overview

What is the Year 7 Mathematics curriculum aiming to achieve?		
What do we want our Year 7 Mathematicians to be like?	How are we building on prior learning?	How can parents/carers support their child's learning?
<ul style="list-style-type: none"> Have a developing mathematical vocabulary and recall key facts and formulae Able to calculate with confidence Able to communicate methods clearly Confident in talking about the mathematics they are using Competent in using a scientific calculator 	<ul style="list-style-type: none"> Using lessons and homework to check on retention of prior learning Checking students are fluent in key skills by using lessons to review and re-inforce where required Introducing linked concepts that build on prior learning Helping students master key skills 	<ul style="list-style-type: none"> Help by testing them on arithmetic skills and key vocabulary Encourage them to complete homework to the best of their ability Encourage them to revise for tests, making use of online resources Ensure they are properly equipped, including a scientific calculator

How are we organising the Year 7 Mathematics curriculum?			
	Autumn Units	Spring Units	Summer Units
Topics, Skills & Threshold Concepts	<p>Numbers & the number system 1: Factors, multiples & primes; HCF & LCM; prime factorisation; powers and roots; square & cube numbers</p> <p>Measuring 1: labelling conventions; measure lines & angles; draw lines, angles & arcs; construct triangles with ruler & compasses</p> <p>Calculating 1: add, subtract, multiply & divide with integers & decimals; negative numbers; using a calculator; BIDMAS</p> <p>Manipulating 1: algebraic conventions; simplify; expand; use function machines; substitute; write expressions</p> <p>Angles 1: vertically opposite angles; angles at a point; angles on a line; angles in triangles & quadrilaterals</p> <p>Place Value 1: inequality notation; order integers & decimals; multiply & divide by powers of 10; round to nearest integer, 10, 100, 1000 & decimal places</p> <p>Representing 1: types of data; interpret & construct frequency tables, pictograms, bar charts, pie charts and vertical line charts</p>	<p>2D & 3D shapes 1: line & rotational symmetry; faces, edges & vertices; properties of 2D shapes; nets</p> <p>Equations 1: solve multi-step equations with integer or fraction solutions</p> <p>Fractions 1: use fractions; simplify equivalent fractions; convert between improper & mixed; convert fractions to decimals; order fractions; fraction of an amount</p> <p>Units 1: convert units of length, mass, capacity, time & money</p> <p>Area, perimeter & volume 1: perimeter; area of a rectangle, triangle, parallelogram & trapezium; volume & surface area of cuboids</p>	<p>Ratio 1: use ratio notation; simplify ratios; link to fractions; ratio tables, solve problems</p> <p>Percentages 1: convert between fractions, decimals & percentages; calculate a percentage increase or decrease</p> <p>Sequences 1: use rules to generate sequences; find rules; arithmetic progressions</p> <p>Analysing 1: calculate the mean, median, mode & range; compare data sets</p> <p>Fractions 2: add, subtract, multiply & divide with fractions or mixed numbers</p> <p>Symmetry & transformations 1: coordinates; equations of lines parallel to an axis; construct reflections, rotations & translations using a vector</p> <p>Probability 1: probability scale, randomness, fair, equally likely, use sample spaces to calculate probability</p>
Enrichment within the curriculum	During mathematics lessons, students will have opportunities to develop and practise problem-solving skills. They will learn how to think mathematically and begin to be able to explain their reasoning using structured methods. Real-world applications of mathematics will be discussed whenever possible, including links to careers.		
Cross curricular links	<ul style="list-style-type: none"> Science: calculator skills, using formulas, analysing data, drawing & interpreting charts, units Geography: drawing and interpreting charts and graphs and analysing data, ratio Technology: unit conversions, ratio 		
Extra-curricular opportunities	Every year, groups of students take part in the Junior Mathematical Challenge. Students are able to seek help and support from their teachers outside lessons at any time, and homework support is always available. The Maths Department runs a lunchtime drop-in support session and offers IT access to complete homework.		

What are the intended outcomes of the Year 7 Mathematics curriculum?			
	Autumn	Spring	Summer
Opportunities to show progress (Assessments)	<p>Homework – weekly online tasks set on Sparx Maths, which follows the curriculum. Tasks are personalised to a student's ability, and Sparx provides targeted practice, consolidation, and booster tasks in addition to compulsory tasks.</p> <p>End of unit quizzes – at the end of every unit, students complete a short quiz in class, which is self-assessed with support from the teacher. Students can identify skills needing further practice before the more formal assessments.</p>		
	<p>Autumn 1 test Autumn 2 test</p> <p>Formal, 1 hour tests, covering concepts and skills from specific units. These are marked by the teacher and evaluated by the student in class afterwards.</p>	<p>Spring 1 test Spring 2 test</p> <p>Formal, 1 hour tests, covering concepts and skills from specific units. These are marked by the teacher and evaluated by the student in class afterwards.</p>	<p>Summer Paper 1 (non-calculator) Summer Paper 2 (calculator)</p> <p>Formal, 1 hour tests, covering concepts and skills from all units. These are marked by the teacher and evaluated by the student in class afterwards.</p>
Impact on personal development (SMSC)	Mathematics provides essential skills needed for everyday life. Many jobs require the use of problem-solving skills, and these often involve mathematics as well. Through mathematics, students learn how to analyse, communicate, explain and evaluate. Students will also become better equipped to deal with difficult problems and begin to develop independence, perseverance and resilience.		
Preparation for the next stage of education	The topics taught are part of our spiral curriculum and introduce, or build upon, fundamental skills that underpin the whole mathematics curriculum. These concepts and skills all feature, to varying extents, in the GCSE course. Developing competence and confidence in these key areas will set students up for success at GCSE level. Regular homework and assessments will also provide students with opportunities to test their understanding and demonstrate their skills.		