

YEAR 7 MATHS CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

The learning at Key Stage 3 is sequenced to allow students to become fluent in the fundamentals of mathematics, to develop reasoning skills and to apply knowledge to solve problems. All units interleave crucial knowledge and skills from prior learning at Key Stage 3 as from the Key Stage 2 National Curriculum topic areas of Number, Ratio and proportion, Algebra, Geometry, Measurement and Statistics. This ensures that students build upon prior learning and have secure retention of knowledge over time.

The curriculum builds on key ideas from KS2, starting with consolidation of number properties and calculations. Then algebraic notation is introduced and linked to sequences and equations. Charts and averages are considered before percentages are consolidated and built upon while numerical skills are linked to rounding and estimating as well as area and perimeter. Next the focus is working with angles and calculating with fractions and then 3D shapes are considered. Finally, ratio skills are developed and further shape work with transformations and finally the new area of probability is introduced.

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	-Number Properties -Number Calculations -Algebraic Notation	- Charts and Averages - Rounding -Linear Equations - Sequences	- Percentages -Area and Perimeter	- Angles -Fractions -3D Shapes	-Ratio	-Transformations -Probability
Core Knowledge/ Threshold Concept	Understand, reason, and solve problems involving: - Multiples, factors, primes, HCF, LCM and product of prime factors -Formal non calculator methods, metric units, negative numbers, order of operations -Function machines, algebraic notation,	Understand, reason and solve problems involving: -Solve problems involving, charts timetables and simple graphs, drawn and interpret pictograms, pie charts and stem and leaf diagrams, calculate averages and range from a list, combined means and tables	Understand, reason and solve problems involving: - Converting between fractions, decimals and percentages, finding a percentage of an amount, percentage increase and decrease, expressing quantities as a percentage - Properties of 2D shapes, perimeter and area of simple and	Understand, reason and solve problems involving: -Draw and measure angles, angles on a line, round a point, vertically opposite, in a triangle and in a quadrilateral, angles in parallel lines - Simplify fractions, convert between fractions and mixed numbers, add,	Understand, reason and solve problems involving: - Form and simplify ratios, link ratios to fractions, share into a ratio, solve direct proportion problems, ratio involving units, combining ratios	Understand, reason and solve problems involving: -Line and rotational symmetry, reflecting rotating, translating and enlarging shapes -Understand simple probability, probability of a single event, listing outcomes, sample spaces, frequency trees, mutually

	substitution, simplifying expressions, solving equations, expanding a and factorising with one bracket	-Rounding to nearest power of 10 and using decimals places and significant figures, estimation -Solving one and two step equations and with brackets, then with unknowns on both sides -Describing and continuing a sequence, the nth term of a sequence, generate a sequence, find missing terms in a sequence -	compound shapes, link algebra to perimeter	subtract, multiply and divide fractions, simple algebraic fractions -Properties of 3D shapes, nets, volume and surface area of prisms		exclusive events, two way tables
Assessment Opportunities:	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback. One 45-minute non calculator assessment on numeracy and number-based skills.	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback. One 45-minute non calculator assessment on all topics covered so far.	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback.	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback.	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback.	Regular formative assessment in lessons including questioning, recall activities and self / peer assessment. Topic reviews completed after every unit and marked with personalised feedback. Two 45-minute assessments (one non calculator and one

						calculator) on all topics covered so far.
Learning at Home	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths. Pupils are also set revision to complete via classcharts before assessments.	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths.	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths. Pupils are also set revision to complete via classcharts before assessments.	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths.	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths. Pupils are also set revision to complete via classcharts before assessments.	Homework is set every week, consisting of topic reviews and recall activities via Sparx Maths.
Key Vocabulary	Prime Inverse Integer	Mean Estimate	Percentage	Numerator Denominator	Ratio	Symmetry Translate
Spiritual, Moral, Social and Cultural concepts covered	To study maths is to train oneself in the art of reason, assembling the facts before making logical deductions – maths removes any prejudice. By its very nature, maths knows no borders, knows no race, religion or gender and knows no social background Spiritual development examples include: -Sense of enjoyment and fascination in learning -Use of imagination and creativity in their learning -Willingness to reflect on their experiences -The awe and wonder of mathematics such as symmetry in nature and number sequences such as the Fibonacci sequence Moral development examples include: -The use of statistics and how people manipulate them to promote their own (biased) opinions and to discuss the use and misuse of data in all issues including those supporting moral argument. -How to word questionnaires so as not to embarrass people Social development examples include: -Use of a range of social skills in different contexts such as a willingness to participate and to work collaboratively -How the census is used by governments to plan ahead for health, education and social requirements Cultural development examples include:					

	-Appreciating the wealth of mathematics in all cultures throughout history. -How the Mathematical language is a universal language used worldwide
Links to careers and the world of work	Maths is used in daily life and is therefore a vital skill for everyone. Mathematical skills used on a regular basis include: -percentages -fractions -time -best value -financial awareness -ratios -interpreting information -measurements -currency conversions Transferable life skills include: -resilience -mathematical writing -number sense working systematically -independent thinking to solve problems -logical reasoning Possible career links include: -Accountancy -Banking -Self Employed Business- -Architecture -Engineering -Graphic Design