

Subject Intent

Our Mathematics curriculum aims to ensure that all pupils become confident mathematicians, who can solve real life problems and reach their full potential in qualifications work. The curriculum is based on the Maths Mastery principles. Pupils are encouraged to build their fluency by securing their knowledge of mathematical facts and models, and then use this understanding to solve a wide range of problems. Pupils in Years 5 – 9 access the national curriculum through a mastery approach. Over the first half of the year, they progressively develop their understanding of number, calculation, geometry and fractions. The second half of the year revisits this knowledge through time, money and measure contexts. Assessment at this stage is mostly based on pupil work books and is moderated periodically in whole school meetings and through subject leader book scrutiny. Mathematics skills are further embedded through the foundation subject curriculums, and the leaders of these subjects contribute to the assessment of pupils in areas such as measures, money and statistics. We also plan multiple opportunities for our pupils to use mathematics in real world situations, through for example, role play, enterprise projects and visits out of school.

Year Group	9	Week/s	Topic/Theme <i>Key vocabulary including Tier 3 subject specific words</i>	Learning Outcomes Knowledge and Skills To know, to use, to apply...	Links to: Literacy, Numeracy, SMSC and British Values Gatsby Benchmarks Learning Behaviours/Skills Builder
Term					
Autumn		1-3	Place Value Digit, number, numeral, partition, combine, total, value, equal, ones, tens, hundreds, thousands, compare, order, symbol, more than, less than, represent, round.	<ul style="list-style-type: none"> Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Identify, represent and estimate numbers using different representations. Solve number problems and practical problems involving these ideas. <p>Reasoning and Problem Solving (RPS): Missing number opportunities.</p> <p>Enrichment Activities Ideas: play games of bingo, link to prices and partition to £ and p, target board - odd one out activities</p> <p>Key Questions: Why do you think...? What can you say....?</p>	Literacy Take part in discussions Skills Builder Staying positive
		4-8	Number, Addition and Subtraction Parts, whole, combine, partition, total, number bond, multiple, add, subtract, equal, inverse, operation, increase, decrease, equation, calculate, sum, find, column method, bridging, regrouping (not carrying over), exchanging (not borrowing)	<ul style="list-style-type: none"> Add and subtract tens or hundreds from a three-digit number. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. Estimate the answer to a calculation and use inverse operations to check answers. Solve problems, including missing number facts, place value, and more complex addition and subtraction. <p>RPS: Missing number opportunities.</p> <p>Enrichment Activities Ideas: shopping lists and money, calculating change, visit different shops and stores, card and dice games.</p> <p>Key Questions: How would you solve... using what you have learned? How would you show....?</p>	Literacy Take part in discussions, talk or write about pictures, answer questions Skills Builder Staying positive, Problem solving

	9-12	<p>Multiplication and division</p> <p>Group, set, multiple, multiply, divide, counting, equal, pairs, factor, product, array, row, column, inverse, equation, calculate.</p>	<ul style="list-style-type: none"> Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems involving missing numbers and scaling. <p>RPS: Odd one out opportunities.</p> <p>Enrichment Activities Ideas: beetle drive, target practice and scoring games and make natural arrays using egg boxes.</p> <p>Key Questions: How would you organise to show...? Which is the best answer....?</p>	<p>SMSC and British Values Cooperate with others, socialise with other pupils and other people (Tolerance)</p> <p>Literacy Talk or write about pictures.</p> <p>Skills Builder Staying positive, Problem solving</p>
	13-15	<p>Properties of Shapes.</p> <p>Circle, square, triangle, rectangle, 2D, flat, 3D solid, cube, cuboid, sphere, pyramid, prism, cone, cylinder, curved, straight, face, side, angle, vertices, Venn diagram, Carroll diagram.</p>	<ul style="list-style-type: none"> Draw 2-D shapes and make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. <p>RPS: Odd one out opportunities.</p> <p>Enrichment Activities Ideas: box modelling and sculpture work, visit a Sculpture Park, cross hatching art.</p> <p>Key Questions: Can you invent...? How would you improve....?</p>	<p>Literacy Use new vocabulary</p> <p>Gatsby Benchmark 4</p> <p>Skills Builder Creativity</p> <p>Careers Describe yourself, your strengths and preferences</p>
Spring	1-2	<p>Review of Autumn term</p>	<p>Revisit elements from Autumn Term (as chosen by Class Teacher).</p> <ul style="list-style-type: none"> Four operations in contexts (money/measures). Revisit of shapes. 	<p>Gatsby Benchmarks 4 and 6</p> <p>Skills Builder Aiming High</p>
	3-6	<p>Fractions</p> <p>Half, quarter, third, fifth, tenth, whole, part, equal, split, divide, share, groups, numerator, denominator equivalent, decimal place.</p>	<ul style="list-style-type: none"> Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts. Recognise and show, using diagrams, equivalent fractions with small denominators. Add and subtract fractions with the same denominator within one whole. Compare and order unit fractions, and fractions with the same denominators. <p>RPS: True, false, sometimes true opportunities.</p>	<p>SMSC and British Values Offer reasoned views (Democracy)</p> <p>Literacy Take part in discussions.</p> <p>Skills Builder Speaking, Listening, Teamwork.</p>

			<p>Enrichment Activities Ideas: design and make their own equivalent fraction dominoes, make and share food.</p> <p>Key Questions: Which is the best answer...? Which statement supports....?</p>	
	7-10	<p>Time</p> <p>Clock face, hands, hour, minute, second, analogue, digital, am, pm, 24-hour display, 12-hour display, leap year, convert.</p>	<ul style="list-style-type: none"> Tell the time from 1- hour and 24-hour clocks. Tell time to the nearest minute. Know the number of seconds in a minute, the number of days in each month and the number of days in a year/leap year. Calculate the duration of an event and solve problems involving measuring time. <p>RPS: Visualisation opportunities</p> <p>Enrichment Activities Ideas: link to planning and taking journeys using public transport.</p> <p>Key Questions: Which is...? Where is....?</p>	<p>Literacy Talk or write about pictures, use new vocabulary.</p> <p>SMSC and British Values Enjoy learning about the world around them. Understand consequences. (individual Liberty)</p> <p>Gatsby Benchmark 4 Skills Builder Aiming High, Staying Positive.</p>
	11-12	<p>Geometry: Sequences, Position and Direction</p> <p>Rotate, quarter turn, half turn, whole turn, clockwise, anticlockwise, right angle.</p>	<ul style="list-style-type: none"> Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. <p>RPS: Visualisation opportunities</p> <p>Enrichment Activities Ideas: bee-bot programmes, light and music sequencing e.g. Simple Simon, find angles in the environment.</p> <p>Key Questions: Can you find...? How would you categorise....?</p>	<p>Literacy Use new vocabulary.</p> <p>Skills Builder Leadership, teamwork, problem solving</p>
Summer	1-3	<p>Money</p> <p>Coin, note, bank card, cash, total, add, change, more, less, customer, increase, decrease, combine.</p>	<ul style="list-style-type: none"> Recognise coins of different values. Combine smaller coins to make different totals. Compare amount of money. Find change from 20p and £1 (when the cost is a multiple of 10p). <p>RPS: Word problem opportunities.</p> <p>Enrichment Activities Ideas: link to life skills and using money in the local community.</p>	<p>SMSC and British Values Socialise with other pupils and other people. Cooperate with others. Enjoy learning about the world around them, Understand consequences. (Mutual Respect)</p> <p>Literacy Role play</p> <p>Gatsby Benchmarks 2 and 6 Skills Builder Problem solving</p> <p>Careers Show that you can manage your own budget and contribute to household and school budgets</p>

			<p>Key Questions: What is...? How much is....?</p>	
4-7	<p>Measures: Length, capacity and mass</p> <p>Measuring cylinder, beaker, scales, balancing scales, metre stick, trundle wheel, millilitre, centimetre, metre, millilitre, litre, gram, kilogram, measure, estimate, record.</p>	<ul style="list-style-type: none"> • Measure with a reasonable level of accuracy and record findings on a table or chart. • Compare measurements using < > and = signs. • Solve addition and subtraction problems involving measures. <p>RPS: Word problem opportunities.</p> <p>Enrichment Activities Ideas: make mocktails, mark out a pitch for a game, link to athletics</p> <p>Key Questions: How would you use...? Which is the best answer....?</p>	<p>Literacy Take part in discussions, develop vocabulary</p> <p>Gatsby Benchmark 4</p> <p>Skills Builder Staying positive, Problem solving</p>	
8-10	<p>Geometry: Properties of Shapes</p> <p>Circle, square, triangle, rectangle, 2D, flat, 3D solid, cube, cuboid, sphere, pyramid, prism, cone, cylinder, curved, straight, face, side, angle, vertices, rotate, order, sequence, net.</p>	<ul style="list-style-type: none"> • Recognise 2D shapes on the faces of 3D objects. • Use shapes in patterns and sequences. • Describe 2D and 3D shapes based on their properties. • Begin to recognise right angles in 2D shapes. <p>RPS: Opportunities to use diagrams, charts and tables</p> <p>Enrichment Activities Ideas: design their own Picasso inspired piece of abstract art, make their Islamic style prayer mat.</p> <p>Key Questions: What is the theme...? Describe....?</p>	<p>Literacy Use new vocabulary, make marks on materials.</p> <p>SMSC and British Values Participate positively in art, interest in faiths (geometric patterns) (Mutual Respect)</p> <p>Skills Builder Creativity</p>	
11-12	<p>Statistics</p> <p>Frequency, total, mark, tally, survey, collect, group, record, category, pictogram, bar chart, axis, scale, icon, conclusion</p>	<ul style="list-style-type: none"> • Retrieve information from pictograms, tallies and bar charts. • Complete tallies, pictograms and bar chart. • Draw simple conclusions from tallies, bar charts and pictograms. <p>RPS: Opportunities to use diagrams, charts and tables</p> <p>Enrichment Activities Ideas: collect information about nature/careers and present their findings using ICT (using a spreadsheet).</p> <p>Key Questions: Why do you think...? What conclusions can you make....?</p>	<p>Literacy Ask questions, answer questions, listen to an opinion, use punctuation.</p> <p>SMSC and British Values Enjoy learning about the world around them. Enjoy learning about others. (Individual Liberty)</p> <p>Skills Builder Listening, speaking, teamwork</p> <p>Careers Show that you can be positive, flexible and well-prepared at transition points in your life</p>	

Intended impact:

Pupils will have a secure knowledge of calculation, shape and measures up to the level required to access the Entry Level Mathematics course in Year 10. Pupils who have excelled in Year 9 may already have taken the Entry Level examination and will work towards Functional Skills Level 1 in Year 10. They will have experienced problems set in a wide variety of contexts and will present their answers in full sentences (number or words), developing their ability to problem solve and stay positive. In addition, the interactive and practical nature of the curriculum will have helped them to develop teamwork, speaking and listening skills.



