

George Romney Junior School
Mathematics Curriculum
(Objectives to be covered by appropriate resources)

**Our Curriculum incorporates 'The Dimensions of Depth' including:
Conceptual Understanding, Language & Communication and Mathematical Thinking-
Which underpins ALL aspects of the curriculum.**

Problem Solving is at the heart and is embedded in ALL units.

**Objectives/Units are taught termly, but do not have to be in the order that follows below;
staff have the freedom in their professional judgement to decide when units are covered.
However, termly objectives/units cannot be moved to another term.**

Y3 Maths Curriculum

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve
Autumn Term	Number sense and exploring calculation strategies Read, write, order and compare numbers to 100. Calculate mentally using known facts, round and adjust, near doubles, adding on to find the difference, doubling & halving. Derive new facts from a known fact.		Place Value Read, write, represent, partition, order and compare 3 digit numbers. Find 10 and 100 more or less. Round to the nearest 10 and 100. *Big Maths* focus on Mastery of 2 digit numbers before understanding & exploring Partitioning 3 digit numbers.			Retrieval, revision & Assessment	Addition and Subtraction Develop and use a range of mental calculation strategies. Illustrate and explain written methods- eg. Big Maths - partitioning first, then moving on to relevant column methods.			Shape Explore & Draw: recognise horizontal & vertical lines, parallel lines, perpendicular lines, symmetry. 2D Shapes: compare & sort 2D shapes; identify regular & irregular polygons; identify congruent shapes. 3D Shapes: recognise 3D shapes. Position & Direction: Use the 4 compass points; grid references		

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve
Spring Term	Multiplication & Division Multiplication & Division facts for 2,3,4,5,6,8,10. Multiplicative structures: equal groups/parts, change and comparison, correspondence problems. Relationships: commutatively and inverse.		Deriving Multiplication & Division facts Multiply & Divide by 10 (100). Multiply a 2 digit number by 2,3,4,5 and corresponding division situations. Divide 2 digit by a 1 digit. *Big Maths* Smile Multiplication; fact Families; Coin Card Multiplication; Finding Multiples (Mully).			Retrieval, revision & Assessment	Amounts & Time Amounts: Explore measures of distance, mass, space, temperature, time; Money- (pence, pounds-using CLIC steps). Time: Periods of Time e.g. sec in a min, min in an hour, hours in a day, months in a year etc. Telling The Time: Tell, record, write and order the time; 12 hr, a.m. & p.m.			Fractions Part-whole relationships. Fractions as part of a whole or a whole set and as a number. Add, subtract, compare and order fractions. *Big Maths* Fractions as a whole; e.g. 2 halves, 3 thirds: Fractions of a set; e.g. fractions of amounts by sharing: Fraction Counting; Adding & Subtracting Fractions with same Denominator (within 1); Compare & Order Fractions with same Denominator; Use & Apply Equivalent Understanding		

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Summer Term	Exploring Calculation Strategies and Place Value Consolidate The Column Methods of Addition & Subtraction. Add & Subtract Mentally (Explore different strategies children have) Find 10,100,1000 more or less. Order and Compare beyond 1000. Round to nearest 10,100,1000 (10,000)		Securing Multiplication & Division Recap and consolidate understanding from the Spring Term. Using the *Big Maths* strategies of Smile Multiplication, Fact Families, Coin Card Multiplication, Finding Multiples- Recall and Use Multiplication & Division Facts for the 6 and the 8 times table (if appropriate explore 7 and 9)			Length & Perimeter Measure, draw & compare lengths. Add & Subtract lengths. Understanding & Calculating Perimeter of rectangular shapes, moving on to congruent shapes. (Introduce Area if appropriate)			Retrieval, revision & Assessment	Angles, Graphs and Measures Identify angles including right angles and recognise as a quarter of a turn. Collect interpret and present data using charts and tables. Read scales with different intervals when measuring mass and volume. Estimate, Weigh and Compare masses and capacities with mixed units.		

Y4 Maths Curriculum

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve
Autumn Term	Reasoning with Large Numbers 4 digit place value. Read, write, represent, order and compare. Find 10,100 or 1000 more or less. Round numbers to the nearest 10,100,1000 (10,000)		Addition and Subtraction Select appropriate strategies to add and subtract. Illustrate and explain appropriate addition & subtraction strategies including column method with regrouping. *Big Maths* Addition: $3d + 3d$. subtraction: $4d - 2d$ and $4d - 3d$ (extend if appropriate)			Retrieval, revision & Assessment	Multiplication and Division Mental multiplication and Division strategies using place value and known and derived facts. Short Multiplication and Division. *Big Maths* All Smile Multiplication Fact Families; Completing Full Coin Cards; Finding Mully- using tables facts. Multiplication: $2d \times 1d$; Division: $2d / 1d$ (using $\times 2, 3, 4, 5$) with no remainders.			Shape and Symmetry Identify lines of symmetry. Classify, compare and order angles. Compare and classify 2D shapes. Identify 3D shapes from 2D representations.		

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Spring Term	Securing Multiplication & Division Facts Identify & explore patterns in 'ALL' multiplication tables and inverse links. *Big Maths* Multiplying and Dividing by multiples of 10. Identify Multiples, Factors, Prime. Use multiplication facts to find division facts (with remainders).		Fractions Explore different interpretations and representations of fractions. Knowledge of Equivalent Fractions. Mixed Number & Improper Fractions. Add & Subtract Fractions with same Denominator including fractions greater than 1. *Big Maths* (As above)			Retrieval, revision & Assessment	Decimals Decimal equivalents to tenths, quarters, three quarters and halves. Compare and order numbers with same number of decimal places. Multiply and Divide by multiples of 10 including decimals. *Big Maths* Using CLICs to see relationships and Fraction Learn Its e.g. $1/2 = 0.5$, $1/10 = 0.1$, $1/4 = 0.25$ $1/100 = 0.01$			Time Analogue to digital, 12 hour and 24 hour. Convert between units of time. Understand Time Problems.		Area and Perimeter Perimeter of rectangles and rectilinear figures. Area of rectangles and rectilinear and compare. Investigate area and perimeter. *Big Maths* (As above)	

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Summer Term	Solving Measures and Money Problems Convert units of measure. Select appropriate units to measure. Use strategies to investigate problems: trial & improvement, working systematically. *Big Maths* : Amounts of e.g. distance, mass, money, space, temperature. Problem Solving using 'Prove Its'			Reasoning with patterns and sequences Roman numerals up to 100. Finding the rule in a set of numbers. Number sequences and patterns. *Big Maths* : CLICs, algebra, probability, ratio, 2 step function machine and patterns of shape.			Discrete and continuous data Read, interpret and construct pictograms, bar charts and time graphs. Compare tables, pictograms and bar charts. *Big Maths* : (As above)			Retrieval, revision & Assessment	Position and Direction Describe and plot using co-ordinates. Describe translations. *Big Maths* : (As above)		

Y5 Maths Curriculum

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve
Autumn Term	Reasoning with large whole integers (Place Value) Read, write, order and compare numbers up to one million. Round numbers within one million to the nearest multiple of powers of 10. Read Roman numerals to M (1000) <i>*White Rose*: Partition numbers to 1 million</i>			Integer addition & subtraction Use rounding to estimate & check. Use a range of Mental Strategies to add & subtract integers. Illustrate & Explain the written method of Column addition & subtraction. Select efficient calculation strategies. <i>*White Rose*: Inverse Operation.</i>		Retrieval, revision & Assessment	Multiplication & Division A Identify Multiples and Factors. Multiply & Divide by multiples of 10. Illustrate and Explain formal multiplication and division (short) strategies. Use a range of mental calculation strategies. <i>*White Rose*: Investigate Prime Numbers.</i>			Introducing Fractions Represent, identify, name, write, order and compare fractions. Calculate Fractions of Amounts. <i>*White Rose*: Recognise Equivalent Fractions. Add & Subtract Fractions with same Denominator.</i>		

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Spring Term	Fractions, Decimals and Percentages Add & Subtract Fractions with Denominators that are multiples of the same number. Multiply Fractions by a Whole number. Explore Percentage, Decimal, Fractions Equivalence. <i>*White Rose*: Order and Compare a range of Decimals, Fractions, Percentages.</i>					Retrieval, revision & Assessment	Multiplication & Division B Multiply & Divide Decimals by multiples of 10. Illustrate and Explain formal multiplication and division with remainders (Long) strategies. <i>*White Rose*: Square & Cube numbers</i>		Perimeter & Area Investigate Area & Perimeter of Rectilinear Shapes. Estimate Area. <i>*White Rose*: Perimeter and Area of Polygons and Compound Shapes.</i>		Statistics Complete, read & interpret Data presented in a line graph. Read & interpret Timetables. <i>*White Rose*: Two Way Timetables.</i>	

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Summer Term	Angles, Shape and Transformations Classify, Compare and Order Angles. Measure and Draw Angles with a Protractor. Understand and Use Angle Facts to Calculate missing Angles. Classify 2D Shapes (regular and irregular Polygons). Classify 3D Shapes with properties. Translations and Reflections. Co-Ordinates in all four Quadrants. <i>*White Rose*: Problem Solving with Co-Ordinates</i>				Calculating with Decimals Mental Strategies to Add & Subtract involving Decimals. Formal Written Strategies to Add, Subtract, and Multiply involving Decimals. Derive Multiplication Facts involving Decimals. <i>*White rose*: Decimal Sequences; Extend understanding of Multiplying & Dividing multiples of 10 with Decimals.</i>		Converting Units of Measure Convert between Metric Units of Length, Mass, Capacity and Units of time. Know and Use Approximate conversions between Imperial and Metric. <i>*White Rose*: Calculate with Timetables.</i>			Retrieval, revision & Assessment		Volume Use Cube Numbers & Notation. Estimate Volume. Convert Units of Volume. <i>*White Rose*: Estimate Capacity.</i>	

Y6 Maths Curriculum

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve	
Autumn Term	Integers and Decimals (Place Value) Represent, read, write, order and compare numbers up to ten million. Round numbers, estimate and use to solve problems in context. Solve multi-step problems involving + and - *White Rose*: Also powers of 10	Addition, Subtraction, Multiplication and Division Add and Subtract integers confidently. Identify and use properties of number, focusing on Primes. Multiply larger integers and decimal numbers using a range of strategies. Divide integers by 1 digit and 2 digit numbers representing remainders appropriately. Illustrate and explain formal multiplication and division strategies. *White Rose*: Also Common Factors; Common Multiples; Rules of Divisibility; powers to 100.				Retrieval, revision & Assessment	Fractions Deepen understanding of Equivalence. Order, simplify and compare fractions, including greater than 1. Recall equivalence between common fractions and decimals. Find decimal quotients using short division. Add and subtract fractions. *White Rose*: Add and Subtract Mixed Numbers; Multi-Step Problems. Fractions of Amounts. Multiply and Divide fractions.				Measurements & Converting Units Convert & Calculate Metric Measures. Metric to Imperial Measures and vice versa.		

	Week One	Week Two	Week Three	Week Four	Week Five	Week Six	Week Seven	Week Eight	Week Nine	Week Ten	Week Eleven	Week Twelve	
Spring Term	Ratio, Proportion and Algebra Use Fractions to express proportion. Identify ratio as a relationship between quantities and as a scale factor. Unequal sharing involving ratio. *White Rose*: Function Machines; express missing values; formulae; equations; Find pairs of values; Solve problems with 2 unknowns.			Decimals and Measures Convert units of measures. Calculate area of parallelograms and triangles. Calculate, estimate and compare the volume of cuboids. *White Rose*: multiply and divide decimals in context.		Retrieval, revision & Assessment	Fractions, Decimals and Percentages Connect Percentages with Fractions. Explore the Equivalence of Fractions, Decimals and percentages. Calculate and compare percentages of amounts. Use within data and statistics. *White Rose* Percentage missing value-prob solving.			Area, perimeter and Volume Area and Perimeter of non-rectilinear shapes. Use cube numbers and notation. Estimate Volume and Convert units of Volume. *White Rose* Volume of a Cuboid			

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Summer Term	Geometry (Angles & Length-Shapes-Co Ordinates-Position & Direction) Compare and classify a range of Geometric shapes. Use Angle Facts to find unknown angles. Draw a range of Geometric shapes using given dimensions and angles. Describe, Draw, Translate and Reflect shapes on a co-ordinate plane. Recognise and Construct 3D Shapes. Name and illustrate parts of a Circle. *White Rose*: Nets of 3D Shapes; Solve Problems with Co-Ordinates.				Consolidate Fractions. Review understanding of the relationship between Fractions, Percentages and Decimals. Explore problem solving questions e.g. past SATs papers.		Themed Projects, Consolidation and Problem Solving Profit and Loss. Distance Conversion Graphs. Budget for a Holiday. Time Problems. Annual Salary; Hourly Rates. Bills and Mortgages. *White Rose*: As Above.			Retrieval, revision & Assessment		Themed Projects, Consolidation and Problem Solving continued. Profit and Loss. Distance Conversion Graphs. Budget for a Holiday. Time Problems. Annual Salary; Hourly Rates. Bills and Mortgages. *White Rose*: As Above.	

Curriculum Overview: Mathematics

Mathematics is the poetry of logical ideas: Albert Einstein

Our children live in an ever-changing, rapidly advancing world where new knowledge and new skills need to be acquired, understood and mastered at a rate previously unheard of.

We aim to enable children to learn the full range of knowledge, skills and understanding in order to appreciate their world as well as recognising and embracing their role in becoming citizens who make a positive contribution to our society; now and in the future.

Our community and its environment help shape the way in which we structure learning opportunities. We balance the celebration of all positive aspects of our local context with the ability to look beyond the Furness Peninsula in order to understand and embrace the wider world.

We are totally committed to learning of the highest standard in academic, personal and social forms and have these aspirations for all children in our care.

Our Maths Curriculum incorporates 'The Dimensions of Depth' including:

Conceptual Understanding, Language & Communication and Mathematical Thinking-Which underpins ALL aspects of the curriculum.

It is of fundamental importance that every child leaves George Romney Junior School having acquired, developed, and retained the mathematical fluency required to be a successful adult.

Times Tables are a fundamental element to becoming a fluent mathematician, so we encourage regular practice of these facts, through fun and inspiring games and activities such as 'TTRockstars'.

Problem Solving is at the heart and is embedded in All units. In order for everyone to develop mastery in maths, we ensure that we teach the key concepts in a variety of different ways; using manipulatives or through taking the learning outside or through hands-on investigation or practice. We also use a drip-feed approach to the key arithmetic skills required with activities such as 'Fluent in 5' ensuring the children practice these skills regularly so that the knowledge is reinforced and eventually retained.

Teachers regularly use quizzes, note-taking, knowledge organisers, questions of the day, working walls, unit assessments, photos and key vocabulary to help support our children in the retention of key skills and knowledge.

