

Excellence, *care* & **FUN** for **ALL** where every child can

*Sparkle* like a **JEWEL**

*'Your word is a lamp to guide my feet and a light for my path' (Psalm 119.105)*

## Haddenham St Marys Maths Knowledge Organiser

	Nursery 2-4	Reception	Year 1	Year 2
Place Value	<p>Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</p> <p>Experiment with their own symbols and marks as well as numerals.</p> <p>Recite numbers past 5.</p> <p>Say one number for each item in order: 1, 2, 3, 4, 5.</p> <p>Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').</p> <p>Show 'finger numbers' up to 5.</p>	<p>Subitise to 5</p> <p>Verbally count beyond 20, recognising the pattern of the counting system.</p> <p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p> <p>Read numbers to 20 (to 10 confidently. 11-20 may be with some support).</p> <p>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</p> <p>Order numbers to at least 10.</p> <p>Find / say 1 more or less than a number to 10.</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, from any given number.</p> <p>Count numbers to 100 in numerals; count in multiples of 2s, 5s and 10s.</p> <p>Identify and represent numbers using objects and pictorial representations.</p> <p>Read and write numbers to 100 in numerals.</p> <p>Read and write numbers from 1 to 20 in numerals and words.</p> <p>Given a number, identify one more and one less</p>	<p>Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward.</p> <p>Read and write numbers to at least 100 in numerals and in words.</p> <p>Identify, represent and estimate numbers using different representations, including the number line.</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones).</p> <p>Compare and order numbers from 0 up to 100.</p> <p>Use &lt;, &gt; and = signs</p>
Addition	<p>Subitise to 3</p> <p>Count how many</p> <p>Make numbers to 5</p>	<p>Conceptually subitise to 5</p> <p>1 more</p>	<p>Add together</p> <p>Add more</p> <p>Bonds within 10</p>	<p>Add 1s to and numbers (related number facts)</p> <p>Add three 1-digit numbers</p>

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	Add 1 more (through songs and rhymes)	Notice the composition of numbers within 10 Combine 2 groups Add more	Related facts withing 20 Missing numbers	Add across a 10 Add multiples of 10 Add 19s to any numbers Add two 2-digit numbers (not across 10) Add two 2-digt numbers (across a ten) Missing number
Subtraction	Subitise to 3 Count how many Make numbers to 5 Take away (through songs and rhymes)	Conceptually subitise to 5 1 less Notice the composition of numbers within 10 Partition Take away	Find a part Take away Bonds within 10 Related facts within 20 Missing number	Subtract 1s from any number (related facts) Subtract across a 10 Subtract multiples of 10 Subtracts 10s from any number Subtract two 2-digit numbers (not across a ten) Subtract two 2-digit numbers (across a ten) Missing numbers
Multiplication	Continue with counting and subitising skills as a foundation for later work on equal groups	Double to 10 Make eaul groups	Count in 2s, 5s and 10s Add equal groups Make arrays Make doubles	Link repeated addition and multiplication Use arrays Double The 2-times-table The 10 times-table The 5 times-table Missing number
Division	Continue with counting and subitising skills as a foundation for later work on equal groups	Sharing Grouping	Make equal groups-grouping Make equal groups-sharing Find a half Find a quarter	Divide by 2 Divide by 10 Divide by 5 Missing numbers

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				Unit fraction Non-unit fractions
Measurement	<p>Compare quantities using language: 'more than', 'fewer than',</p> <p>Understand position through words alone – for example, "The bag is under the table," – with no pointing.</p> <p>Describe a familiar route.</p> <p>Discuss routes and locations, using words like 'in front of' and 'behind'.</p> <p>Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'.</p> <p>Select shapes appropriately: flat surfaces for building, a triangular prisms for a roof, etc.</p> <p>Combine shapes to make new ones – an arch, a bigger triangle, etc. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper.</p>	<p>Compare objects by weight</p> <p>Compare length and height</p> <p>Use language to describe and compare objects when measuring by weight, length, height and capacity.</p> <p>Recognise 1p coins and begin to recognise the value of some other coins, e.g. 2p, 5p, 10p.</p> <p>Use pennies when role playing and count out a given amount of pennies to pay for something.</p> <p>Sequence events in chronological order using language e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p> <p>Recognise and use relating to dates, including days of the week, weeks, months and years.</p> <p>Tell the time to the hour and half past the hour and draw</p>	<p>Compare, describe and solve practical problems for :</p> <p>Length and height, e.g. long/short, longer shorter, tall/short</p> <p>Mass/Weight, e.g. heavy/light, heavier than/lighter than.</p> <p>Capacity and volume, e.g. full/empty, more than, less than, half, half-full, quarter</p> <p>Time, e.g. quicker, slower, earlier, later.</p> <p>Measure and begin to record length and height; weight/ mass, capacity and volume; time (hours, minutes, seconds).</p> <p>Recognise and know the value of different denominations of coins and notes.</p> <p>Compare and sequence intervals of time.</p> <p>Tell and write the time to five minutes, including quarter past/to the hour and</p>	<p>Choose and use appropriate standard units to estimate and measure length/height (m/cm); mass (kg/g); temperature (C) ; capacity ( litres/ ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Compare and order lengths, mass, volume/ capacity and record the results using &gt;, &lt; and =</p> <p>Recognise and use the signs for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24- hour clocks</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in</p>

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	<p>Use informal language like 'pointy', 'spotty', 'blobs', etc.</p> <p>Extend and create ABAB patterns– stick, leaf, stick, leaf.</p> <p>Notice and correct an error in a repeating pattern.</p> <p>Make comparisons between objects relating to size, length, weight and capacity.</p> <p>Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'</p>	<p>the hands on a clock to show these times.</p>	<p>draw the hands on a clock face to show these times.</p> <p>Know the number of minutes in an hour and the number of hours in a day.</p>	<p>terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon; noon and midnight</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Compare durations of events for example to calculate the time taken by particular events and tasks.</p>
Shape		<p>Select, rotate and manipulate shapes to develop spatial reasoning skills</p> <p>Compose and decompose shapes so that children recognise a shape can have shapes within it, just as numbers can.</p> <p>Explore 3D shapes and use them to create models.</p> <p>Use mathematical vocabulary to describe some of their properties, e.g. faces.</p> <p>Recognise and name common</p>	<p>Recognise and name common 2-D shapes, e.g. rectangles, circles and triangles.</p> <p>Recognise and name common 3-D shapes.</p> <p>Compare and sort common 3-D shapes and everyday objects.</p> <p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>	<p>Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.</p> <p>Identify 2D shapes on the surface of 3D shapes, e.g. a circle on a cylinder</p> <p>Compare and sort common 2D shapes and 3D shapes and everyday objects</p> <p>Order and arrange combinations of mathematical objects in patterns and sequences Use mathematical vocabulary to describe position, direction and movement, including</p>

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		3-D shapes, e.g. cuboids, pyramids, spheres. Select, rotate and manipulate shapes to develop spatial reasoning skills		movement in a straight line and distinguish between rotation as a turn and in terms of right angles for quarter, half and $\frac{3}{4}$ turns.
Statistics		Explore simple pictograms and physical block graphs as part of our everyday curriculum, e.g. voting for book to be read; creating simple pictograms to show our favourite foods etc.  Begin to use the pictograms / block graphs to answer simple questions, e.g. which one has the most?		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.