

Hampshire Medium Term Plans for Mathematics: Year 1

Term	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Half Term	Wk7	Wk8	Wk9	Wk10	Wk11	Wk12	End of Term		
Autumn	A1			B1				M1	C1			D1				
Spring	A2			B2				M2	C2			D2			M3	
Summer	A3			B3					C3			D3			M4	

Content common to all blocks	Block A	Block B	Block C	Block D
Fluency (Place value and a sense of number) Problem solving Reasoning	Addition and subtraction (for whole and part numbers) Geometry	Multiplication and division (for whole and part numbers) Measure	Addition and subtraction (for whole and part numbers) Geometry	Multiplication and division (for whole and part numbers) Measure

Notes

- Assessment Milestones (M1-4) based on HAM phase model, KPIs and end of year expectations.
- Big Ideas taken from NCETM Assessment for Mastery documents
- The use of concrete, pictorial and abstract multiple representations for number and calculation is implicit in every lesson.
- Recording should always show a range of representations including, as appropriate, the number line; use of Dienes, Numicon, Cuisenaire etc.; arrays; bar models; informal jottings; different ways to solve the same problem using the child's own recording methods and more formal methods when ready.

It is better to have five ways to solve one problem, than one way to solve five.

Can you: Say it; make it; draw it; write it; explain it?

Five Questions to support mathematical thinking

- If you know this, then what else do you know?
- Can you give me an example of.... and another....and another...?
- What if you change....?
- Which is harder and which is easier.....?
- What is the same and what is different?

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The Big Ideas in Mathematics: Y1 : NCETM	
Number and PV	<ul style="list-style-type: none"> The position a digit is placed in a number determines its value. The language used to name numbers does not always expose the place value, for example the word 'twelve' does not make it transparent that the value of this number is ten and two. It is important that children develop secure understanding of the value of each digit. Place value is based on unitising: treating a group of things as one 'unit'. In mathematics, units can be any size, for example units of 1, 2, 5 and 10 are used in money. In place value units of 1, 10 and 100 are used.
Addition and Subtraction	<ul style="list-style-type: none"> Relating numbers to 5 and 10 helps develop knowledge of the number bonds within 20. For example, given $8 + 7$, thinking of 7 as $2 + 5$ and adding the 2 to 8 to make 10 and then the 5 to total 15. Thinking of part whole relationships is helpful in linking addition and subtraction. For example, where the whole is 6, and 4 and 2 are parts. This means that 4 and 2 together form the whole, which is 6 and 6 subtract 4 leaves the 2 and 6 subtract 2 leaves the 4.
Multiplication and Division	<ul style="list-style-type: none"> Counting in steps of equal sizes is based on the big idea of 'unitising' ; treating a group of, say, five objects as one unit of five. Working with arrays helps pupils to become aware of the commutative property of multiplication, that 2×5 is equivalent to 5×2.
Fractions	<ul style="list-style-type: none"> Fractions express a relationship between a whole and equal parts of the whole. Ensure children express this relationship when talking about fractions. For example, <i>'If the circle (where the circle is divided into four equal parts with one part shaded) is the whole, one part is one quarter of the whole circle.'</i> Halving involves partitioning an object, shape or quantity into two equal parts. The two parts need to be equivalent in, for example, area, mass or quantity.
Measurement	<ul style="list-style-type: none"> Measurement is about comparison, for example measuring to find out which rope is the longest. Measurement is about equivalence, for example how many cubes are equivalent to the length of the table or the mass of the teddy? Standard units can initially be introduced through using a unit that is greater than the things being compared, for example comparing the capacity of a cup and a carton by filling each and pouring into matching bottles to compare the two. Measuring is a practical activity and the activities below should be conducted in practical contexts, using real materials.
Geometry	<ul style="list-style-type: none"> It is important for children to be familiar with a range of 2-D and 3-D shapes and not just recognise them in specific orientations. It is preferable to introduce 3-D shapes before 2-D shapes, since 2-D shapes only exist in the real world as faces of 3-D shapes. An emphasis should be placed upon identifying and describing the properties of shapes. It is important that pupils develop the correct mathematical language to do so. The development of precise language to describe position and movement is important.

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Autumn Term Y1	Place Value and a Sense of Number	Problem Solving and Reasoning	Core Calculation (four rules for whole and part numbers)	Geometry and Measure
A1	Count to and across 100 from 0 (forwards). Identify one more and one less from any whole number. Begin to use a number line to order whole numbers Read and write whole numbers from 1 to 20 in numbers	Solve one step problems that involve addition and subtraction, including empty box problems.	<u>Addition and Subtraction</u> Begin to represent calculations using symbols for addition (+), subtraction (-) and equality (=) Add and subtract with one digit numbers Know or derive number bonds to 20 using patterning and concrete objects.	<u>Geometry</u> Recognise and name common 2-D shapes such as squares and circles <u>Measure</u> Recognise and know the value of different denominations of UK currency
B1	Count to and across 100 from any given number (forwards and backwards) Begin to use a number line to count on and back with whole numbers Read and write whole numbers from 1 to 20 in numbers and words	Solve practical problems involving length and time	<u>Multiplication and Division</u> Use a number line to count in twos Use counting objects to double and half amounts to 20 Share objects equally by counting how many in each group <u>Fractions</u> Recognise, find and name a half as one of two equal parts of an object, shapes or quantity. Know that halving involved partitioning into two equal parts.	<u>Measure</u> Compare and describe lengths and heights (longer/shorter) Compare and describe time in hours (quicker/slower/earlier/later) Sequence events in chronological order (before/after/ next/ first/yesterday/today) Tell the time to the hour Know the days of the week
Assessment Milestone 1				
HALF TERM				
C1	Count in multiples of tens	Solve one and two step problems that involve addition	<u>Addition and Subtraction</u> Represent and use number bonds and	<u>Geometry</u> Recognise and name

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		and subtraction, including empty box problems.	related subtraction facts within 20	common 2-D shapes such as triangles and rectangles Describe position, directions and movements as half turns
D1	Count in multiples of twos	Solve one step problems involving multiplication and division using concrete and pictorial representations Solve practical problems involving mass / weight	<u>Multiplication and Division</u> Represent multiples of twos and tens in a range of ways, including patterning, counting and grouping. Begin to develop strategies to double and halve quantities (even amounts) <u>Fractions</u> Recognise, find and name a quarter as one of four equal parts of an object, shapes or quantity.	Compare and describe mass/weight (heavier/lighter) Compare and describe time in minutes (quicker/slower/earlier/later)
CHRISTMAS HOLIDAYS				

Spring Term Y1	Place Value and a Sense of Number	Problem Solving and Reasoning	Core Calculation (four rules for whole and part numbers)	Geometry and Measure
A2	Count to and across 100 from any given number (forwards and backwards) Identify one more and one less from any whole number and ten more, ten less (using a number line and hundred square) Use a number line to order whole numbers	Solve one and two step problems that involve addition and subtraction, including empty box problems. Show the method and answer in a variety of ways	<u>Addition and Subtraction</u> Add and subtract one-digit and two-digit whole numbers to 20, including zero and using patterning to generate 'new for old' facts.	<u>Geometry</u> Recognise and name common 2-D shapes such as common quadrilaterals and different triangles. Be able to say what is the same and what is different about common 2-D shapes. Explore different orientations of the same shape

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	Read and write whole numbers from 1 to 20 in numbers and words			Describe position, directions and movements as half and quarter turns
B2	Use a number line to count on and back with whole numbers in equal steps. Begin to read and write whole numbers to 100 in numerals.	Solve one step problems involving multiplication and division using concrete and pictorial representations, including arrays with support Solve practical problems involving capacity, volume and time	<u>Multiplication and Division</u> Begin to construct arrays for multiplication using concrete objects and pictorial representations. Use arrays to show commutativity ($5 \times 2 = 2 \times 5$) <u>Fractions</u> Recognise, find and name a half and a quarter as one of two, or four, equal parts of an object, shapes or quantity. Represent using bars	<u>Measure</u> Sequence events in chronological order (times in a day to the hour/yesterday/today) Tell the time to the hour and half past the hour. Draw the hands on a clock face to show these times. Know the months of the year Compare, describe capacity and volume (full/empty/half full) Measure and record capacity and volume (how many cubes to fill?)
Assessment Milestone 2				
HALF TERM				
C2	Count, read and write numbers to too	Solve one and two step problems involving addition and subtraction	<u>Addition and Subtraction</u> Add and subtract one and two digit numbers in a range of contexts. Develop the idea of part-whole to link addition and subtraction (6 is the whole; 4 and 2 are the parts) Relate numbers to 5 and 10 to develop fluency (6 is one more than 5 , so $5 + 3 = 8$ means that $6 + 3 = 9$)	<u>Geometry</u> Recognise and name common 3-D shapes such as cubes and cuboids Describe position, directions and movements as half, quarter and three quarter turns
D2	Count in multiples of	Solve problems involving	<u>Multiplication and Division</u>	<u>Measure</u>

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	twos, fives and tens	doubling and halving Solve problems involving a quarter	Use multiples of ten to derive multiples of five, using concrete objects, arrays and bar models to support visualisation Understand that a group of five objects can be treated as one unit of five (the idea of multiples) <u>Fractions</u> Recognise, find and name a half and a quarter as one of two, or four, equal parts of an object, shapes or quantity. Develop the idea of part-whole (fractions show a relationship between equal parts of a whole) Represent using bars independently	Measure and record lengths and heights using non-standard units Compare and describe time on hours, minutes and seconds.
Assessment Milestone 3				
EASTER HOLIDAYS				

Summer Term Y1	Place Value and a Sense of Number	Problem Solving and Reasoning	Core Calculation (four rules for whole and part numbers)	Geometry and Measure
A3	Count on to and back from any given whole number, up to and across 100 Use the number line and comparative language to order whole numbers (more than/less than)	Be able to use manipulatives and pictorial representations to show how to find the solution to addition and subtraction problems in context.	<u>Addition and Subtraction</u> Represent and use number bonds and related subtraction facts with 20, exploring patterning and systems to support a developing sense of number and the embedding of number facts. Solve empty box problems.	<u>Geometry</u> Explore common 3-D shapes and their properties, using knowledge of 2-D shapes to describe the faces. Include cuboids, pyramids and spheres
B3	Identify one more and one less (ten more and ten less) from any given whole number	Be able to use manipulatives and pictorial representations to show how to find the solution to multiplication and division	<u>Multiplication and Division</u> Solve one step multiplication and division problems in context, calculating the answer using concrete and pictorial	<u>Measure</u> Compare, describe and record lengths and heights. Extend this beyond the

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	Count in multiples of 2s, 5s and 10s (using visual prompts such as a number line)	problems in context.	representations <u>Fractions</u> Use a range of representations, including such things as a bar made from multi-link, to double, half and quarter quantities. Use comparative language such as half as long, twice as long.	classroom to very long/short and very tall/ short (steps around the playground, multi-link towers to find heights or the length of the giant's footprint)
HALF TERM				
C3	Count on to and back from any given whole number, up to and across 100 Use concrete and pictorial representations with comparative language to independently order whole numbers (more than/less than)	Be able to independently use manipulatives and pictorial representations to show how to find the solution to addition and subtraction problems in context.	<u>Addition and Subtraction</u> Add and subtract one and two digit numbers to 20, including zero. Be able to represent the calculations using manipulatives including Diennes , Numicon and Cuisenaire; pictorially using a supported structured number line and their own jottings and pictures; as an abstract 'number sentence'. Solve empty box problems and begin to use the inverse to check.	<u>Geometry</u> Describe position, direction and movements for $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ turns ~ use a clock to link this with time and a compass to begin to describe direction. Link this to maps using a Beebot.
D3	Independently read, write and say numbers from 1 to 20 (to 100, with support) in numerals and words Construct models and images to show an emerging understanding of the multiples of 2s, 5s and 10s (e.g. arrays)	Be able to independently use manipulatives and pictorial representations to show how to find the solution to multiplication and division problems in context.	<u>Multiplication and Division</u> Solve one step multiplication and division problems in context, calculating the answer using concrete and pictorial representations including supported arrays <u>Fractions</u> Begin to explore representations for one, two, three and four quarters (objects and shapes with lines of symmetry)	<u>Measure</u> Compare, describe and record mass/ weight; capacity and volume. Use simple recipes and cooking. Link this with the measurement of time when cooking.
END OF YEAR ASSESSMENT AND TRANSITION DIALOGUE (Milestone 4)				
SUMMER HOLIDAYS				

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UNIT PLANNING MODEL

Week	Date	Block	Unit	Big ideas, unit objectives, hot and cold tasks with key activities, resources, models and images. (now construct the connected learning journey – link to previous learning)
1	04-09-17	A1	Geometry	
2	11-09-17	A1	Addition and Subtraction	
3	18-09-17	A1	Addition and Subtraction	
4	25-09-17	A1	Measure	
5	02-10-17	B1	Measure	
6	09-10-17	B1	Multiplication and Division	
7	16-10-17	B1	Division and Fractions	
Milestone 1				
Half Term				
8	30-10-17	C1	Geometry	
9	06-11-17	C1	Addition and Subtraction	
10	13-11-17	C1	Addition and Subtraction	
11	20-11-17	D1	Measure	
12	27-11-17	D1	Fractions	
13	04-12-17	D1	Multiplication and Division	
14	11-12-17	D1	Multiplication and Division	
Christmas Holiday				

