

HEARTS Curriculum

Long Term Plan - Mathematics KS1

We follow the Primary National Curriculum programme of study for Year 1 and Year 2.

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value.

We teach number and place value, addition subtraction, multiplication, division and fractions in every term so that KS1 children can revisit learning regularly and consolidate small step progress throughout the year.

In addition to main teaching units, key skills and understanding in number and the four operations are revisited regularly throughout the term to ensure that skills are consolidated and children can apply their skills fluently.

AIMS

become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Termly Objectives

<u>Year 1</u>	Number and	Addition and subtraction	Multiplication and	Basic skills	<u>Measurement</u>
	place value		<u>division</u>		
<u>Autumn</u>		read, write and interpret		count to and across	compare, describe and solve
	count to and across	mathematical statements	count in multiples of	50, forwards and	practical problems for
Problem solving	50, forwards and	involving addition (+), subtraction	two	backwards,	lengths and heights
and reasoning	backwards,	(–) and equals (=) signs		beginning with 0 or	
are taught in	beginning with 0 or		recognise odd and even	1, or from any given	compare, describe and solve
every unit.	1, or from any	add one-digit numbers up to 20,	numbers	number	practical problems for: time
	given number	including zero by combing two	Decall devibles of	Count in 2s to 20	Tell the time to the hour and
		sets	Recall doubles of	Carretha mumahan	draw the hands on a clock
Links are made	count, read, write	B	numbers to 10	Say the number	face to show these times
between	and order numbers	Represent, use and memorise	Divide using the sharing	that is one more or one less than a	Calculate and sunts up to 100
different	to 20 in numerals;	number bonds and related	model	number up to 40	Calculate amounts up to 10p
aspects of	-:	subtraction facts. Bonds of	Illouei	and two more or	and know the value of 1p
maths and	given a number, identify one more	3,4,5,10	solve one-step	two less than a	and 2p coins. Make totals and calculate
children are	and one less than a	solve one-step problems that	problems involving	number	
given	number to 50	involve addition and subtraction,	multiplication and	Hamber	amounts up to 10p
opportunities to	Humber to 30	using concrete objects and	division,		Geometry
apply learning	identify and	pictorial representations	,	Recall doubles of	<u>acometry</u>
from differnet	represent numbers	precental representations	Fractions	numbers to 10	Recognise and name
apects e.g.	using objects and	Solve problems involving missing		number facts –	common 2-D and 3-D
addition and	pictorial	numbers with addition	recognise, find and	bonds of 3,4, 5,10	shapes,
subtraction in	representations		name a half as one of		
the context of	including the	subtract one-digit numbers up to	two equal parts of an	mental maths	Reason about shapes as they
money	number line, and	20, including zero by "taking	object, shape or	strategy – adding	sort and classify shapes
,	use the language	away"	quantity	by counting on,	
	of: equal to, more			subtracting by	Data handling
	than, less than	Begin to understand the		counting back,	gather and record simple
	(fewer), most, least	relationship between addition		identifying known	data, and talk about what
		and subtraction		facts	they have found out and
					how they found it out
		Add by increasing on number line			present outcomes using
		Cubtract bu decreesing using a			practical resources, pictures,
		Subtract by decreasing using a			block graphs or pictograms
		number line			

Year 1	Number and	Addition and subtraction	Multiplication and	Basic skills	<u>Measurement</u>
	place value		<u>division</u>		
Spring		read, write and interpret		count to and across	compare, describe and solve
	count to and	mathematical statements	count in multiples of	100, forwards and	practical problems for mass
Problem solving	across 100,	involving addition (+), subtraction	two	backwards,	or weight
and reasoning	forwards and	(-) and equals (=) signs including		beginning with 0 or	
are taught in	backwards,	6=4+2	recognise odd and even	1, or from any given	compare, describe and solve
every unit.	beginning with 0 or		numbers	number	practical problems for: time
	1, or from any	develop fluency and		Count in 2s to 20	Tell the time to the hour and
	given number	independence in adding and	Recall doubles of		half hour and draw the
		subtracting one-digit numbers up	numbers to 10	Doubles of	hands on a clock face to
Links are made	count, read, write	to 20, including zero by combing		numbers to 10	show these times
between	and order numbers	two sets	Divide using the sharing	number facts –	
different	to 20 in numerals;		and grouping model	bonds of 3,4, 5,6.7	recognise and use language
aspects of		Add three single digit numbers		10	relating to dates, including
maths and	given a number,		solve one-step		months
children are	identify one more	Represent, use and memorise	problems involving	mental maths	
given	and one less than a	number bonds and related	multiplication and	strategy – adding	recognise and know the
opportunities to	number to 70.	subtraction facts. Bonds of	division,	by counting on,	value of different
apply learning	Extend to two	3,4,5,6.7.10		subtracting by	denominations of coins and
from differnet	more, two less		<u>Fractions</u>	counting back,	
apects e.g.		solve one-step problems that		identifying known	notes
addition and	identify and	involve addition, using concrete	recognise, find and	facts	solve problems involving
subtraction in	represent numbers	objects and pictorial	name a half and a	Say the number	,
the context of	using objects and	representations	quarter as one of two	that is one more or	money
money	pictorial		equal parts of an	one less than a	Geometry
•	representations	Solve problems involving missing	object, shape or	number up to 70	
	including the	numbers with addition and	quantity	and two more or	Recognise and name
	number line, and	subtraction		two less than a	common 2-D and 3-D
	use the language			number	shapes,
	of: equal to, more	Begin to understand the			
	than, less than	relationship between addition			Reason about shapes as they
	(fewer), most, least	and subtraction			sort and classify shapes
	(= = ,, = = = ,				
	Begin to recognise	Add by increasing on number line			Data handling
	place value in				interpret and construct
	numbers to 20	Subtract by decreasing using a			simple pictograms, and block
		number line			
	Begin to know				diagrams
	what each digit in a	Begin to use efficient ways to			
	two-digit number	add and subtract mentally by			
	represents	counting on, using known facts			

	Partition a 'teens' number into tens and ones	and place value knowledge			
Year 1	Number and	Addition and subtraction	Multiplication and	Basic skills	<u>Measurement</u>
Summer Problem solving and reasoning are taught in every unit. Teaching of Problem solving	count to and across 100, forwards and backwards, from any given number given a number, identify one more and one less than a	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs including 6=4+2 develop fluency and independence in adding and subtracting one-digit and two-	division count in multiples of twos, fives and tens make connections between arrays, number patterns, and counting in twos, fives and tens.	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count in 2s to 20 Doubles of	compare, describe and solve practical problems for capacity and volume compare, describe and solve practical problems for: time Tell the time to the hour and half hour and draw the hands on a clock face to
skills is a focus in this term. Links are made	number to 100. Extend to two more, two less identify and represent numbers	digit numbers up to 20, including zero Add three single digit numbers Represent and use number	recognise odd and even numbers Recall doubles of numbers to 10	numbers to 10 number facts – bonds of 3,4, 5,6.7 10 mental maths strategy – adding	recognise and use language relating to dates, including months
between different aspects of maths and children are given	using objects and pictorial representations including the number line, and	bonds and related subtraction facts within 20 Represent, use and memorise Bonds of 3,4,5,6.7,9,10	Divide using the sharing and grouping models solve one-step problems involving	by counting on, subtracting by counting back, identifying known facts	recognise and know the value of different denominations of coins and notes Solve problems involving
opportunities to apply learning from differnet apects e.g. addition and	use the language of: equal to, more than, less than (fewer), most, least Begin to recognise	solve a range of one-step problems that involve addition, including target number and logic problems	multiplication and division, by calculating the answer using concrete objects and pictorial	Say the number that is one more or one less than a number up to 70 and two more or	Money Geometry Recognise and name
subtraction in the context of money	place value in numbers to 100 Begin to know	Solve problems involving missing numbers with addition and subtraction	representations and arrays with the support of the teacher	two less than a number	common 2-D and 3-D shapes, Reason about shapes as they
	what each digit in a two-digit number represents Partition a 'teens' number into tens	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, Develop understanding of the relationship between addition	recognise, find and name a half and a quarter as one of two equal parts of an object, shape or		describe position, direction and movement, including whole, half, quarter and three-quarter turns (CCL

	and ones	and subtraction	quantity		computing)
		Add by increasing on number line Subtract by decreasing using a number line Begin to choose and use efficient			Data handling interpret and construct simple pictograms, and block diagrams
		ways to add and subtract mentally by counting on, using known facts and place value knowledge, using inverse. Extend to adding near doubles			
Year 2	Number and	Addition and subtraction	Multiplication and	Basic skills	Measurement
<u>Autumn</u>	<u>place value</u>	add and subtract numbers using	division	count forwards and	Solve problems involving
Problem solving	recognise the place	concrete objects, pictorial	calculate mathematical	backwards in steps	with money, solve simple
and reasoning	value of each digit	representations, and mentally,	statements for	of 2, 10 and 5 from	problems in a practical
are taught in	in a two-digit	including:	multiplication and	0: count forwards	context involving addition
every unit. Teaching of	number identify, represent	 a two-digit number and ones using PV and number facts and by counting on mentally 	division solve problems	and backwards in tens from any number	and subtraction of money of the same unit
Problem solving skills is a focus in this term.	and estimate numbers using different representations,	 a two-digit number and tens using PV and by counting on mentally in 10s two two-digit numbers 	involving multiplication and division using materials, repeated addition (represented on a number line)	Say the number that is ten more or ten less than a number up to 90	solve simple problems in a practical context involving addition and subtraction of money of the same unit
Links are made between different aspects of maths and children are given opportunities to apply learning	compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words	without crossing tens boundaries (subtraction) two two-digit numbers crossing tens boundaries (addition) Add and subtract two-digit numbers using concrete objects and pictorial representations and	arrays, mental methods, and multiplication facts, recall and use multiplication and division facts for the 2, and 10 multiplication tables, including	recall and use number facts multiplication and division facts for x2 and x 10, and addition and subtraction facts11,12,20 mental maths	choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); to the nearest appropriate unit, using rulers compare and order lengths and record the results
from differnet apects e.g. addition and subtraction in the context of		expanded written method use place value and number facts to solve problems and support	recognising odd and even numbers show that multiplication of two	strategies –count on and back in 1s and 10s, Bridge through 10, Bridge through a multiple	using >, < and = interpret and construct simple pictograms, tally charts, block diagrams and

money		reasoning e.g. solving missing	numbers can be done in	of 10, use patterns	simple tables
,		number problems using place	any order	(e.g. 4 +3, 40 +30,	
i		, , , , , , , , , , , , , , , , , , , ,	(commutative) and	14+3), using the	ask and answer simple
		value 30+ _ = 37	division of one number	inverse,	questions by counting the
		recall and use addition and	by another cannot	·	number of objects in each
		subtraction facts to 20 fluently,		revision of mental	category and sorting the
		and derive and use related facts		methods for adding	categories by quantity
		up to 100	<u>Fractions</u>	and subtracting a	ask and answer questions
		up to 100	· · · · · · · · · · · · · · · · · · ·	two-digit number	about totalling and
			recognise, find, name	and ones, a two-	_
		Solve problems with subtraction	and write fractions $\frac{1}{3}$,	digit number and	comparing categorical data.
		by applying their increasing	$\frac{1}{4}$, of a length, shape,	tens, adding three	
		knowledge of mental and written	7	one-digit numbers	
		methods	set of objects or	revision of written	
			quantity		
		recognise and use the inverse		methods for adding	
		relationship between addition	Count in halves and	and subtracting	
		and subtraction and use this to	quarters to 10	two-digit numbers	
		check calculations and solve	quarters to 10		
		missing number problems			
Year 2	Number and	Addition and subtraction	Multiplication and	Basic skills	Measurement
<u> </u>	place value	<u> </u>	division_	<u> </u>	
Spring	<u> </u>	add and subtract numbers using	<u> </u>	count forwards and	To tell and write the time to
	recognise the place	pictorial representations,	calculate mathematical	backwards in steps	five minutes, including
Problem solving	value of each digit	mentally and using written	statements for	of 2, 10 and 5 from	quarter past/to the hour and
and reasoning	in a two-digit	methods, including:	multiplication and	0: count forwards	draw the hands on a clock
are taught in	number	a two-digit number and ones	division within the	and backwards in	face to show these times
every unit.	Partition numbers	using PV and number facts	multiplication tables and	tens from any	
	in different ways	and by counting on mentally	write them using the	number	compare and order lengths,
Teaching of		a two-digit number and tens	multiplication (×),	recall and use	volume/capacity and mass
Problem solving	idoutific assessed	using PV and by counting on	division (÷) and equals	number facts	and record the results using
skills is a focus	identify, represent	mentally in 10s	(=) signs	multiplication and	>, < and =
in this term.	and estimate			division facts for	
	numbers using	two two-digit numbers	solve problems	x2, x5 and x 10,	Solve problems involving
	different	without crossing tens	involving multiplication	,	with money
Links are made	representations,	boundaries (subtraction)	and division using	mental maths	
Links are made between		two two-digit numbers	materials, repeated	strategies –count	recognise and use symbols
different	compare and order	crossing tens boundaries	addition (represented	on and back in 1s	for pounds (£) and pence (p);
	numbers from 0 up	(addition)	on a number line)	and 10s, Bridge	combine amounts to make a
aspects of	to 100; use <, > and		arrays, mental	through 10, Bridge	particular value
maths and children are	= signs		methods, and	through a multiple	find different combinations
ciliuren are			multiplication facts	of 10, use patterns	mid different combinations

and subtraction apply their increasing knowledge of mental and written methods recognise and use the inverse relationship between addition and subtraction and subtractions and solve missing number problems use inverse to check calculations and solve missing number problems use inverse to check calculations and solve missing number problems use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number use inverse to check calculations and solve missing number problems The third inverse relations for adding and subtracting methods for adding and subtracting and subtracting and subtracting and subtracting and subtracting identify and describe the properties of 2-D and 3D shapes, including the number of sides and line symmetry in a vertical line Construct simple pictograms, tally charts, block diagrams and simple tables Ask and answer questions about totalling and comparing categorical data. To apply addition and subtraction of 2-digit numbers to solve problems involving data
Year 2Number and place valueAddition and subtraction and subtractionMultiplication and divisionBasic skillsMeasurement
Summer develop fluency and accuracy in count forwards and choose and use appropriate
Partition numbers applying their knowledge of develop fluency and backwards in steps standard units to measure
Problem solving in different ways mental and written methods for accuracy in applying of 2, 3,10 and 5 length/height (m/cm); mass
and reasoning addition and subtraction of two-
are taught inCount over 100. Begin to representdigit numbermental and written methods forforwards and backwards in tenscapacity (litres/ml) to the nearest appropriate unit,

every unit.
Teaching of Problem solving skills is a focus in this term.
Links are made between different

Links are made between different aspects of maths and children are given opportunities to apply learning from differnet apects e.g. addition and subtraction in the context of money

numbers over 100

identify, represent and estimate numbers using different representations,

compare and order numbers from 0 up to 100; use <, > and = signs

Read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given

use place value and number facts to solve problems. recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Use a number line to represent addition and subtraction and support mental calculation

Apply their increasing knowledge of mental and written methods including bridging through 10 and multiples of 10

Solve problems with addition and subtraction

apply their increasing knowledge of mental and written methods

recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

use inverse to check calculations and solve missing number problems

multiplication, division

solve problems involving multiplication and division using materials, repeated addition (represented on a number line) arrays, mental methods, and multiplication facts, including problems in contexts.

recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

Fractions

Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{4}$

 $\frac{1}{2}$. Count in halves and quarters to 10

from any number recall and use number facts multiplication and division facts for x2, x5 and x 10, mental maths strategies —count on and back in 1s and 10s, Bridge through 10, Bridge through a multiple of 10, use patterns (e.g. 4 +3, 40 +30, 14+3), using the

revision of mental methods for adding and subtracting a two-digit number and ones, a twodigit number and tens, adding three one-digit numbers

inverse,

revision of written methods for adding and subtracting two-digit numbers using rulers, scales, thermometers and measuring vessels

compare and order lengths, mass, volume/capacity and record the results using >, < and =

tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times

Solve problems involving with money

Recognise combine amounts to make a particular value

find different combinations of coins that equal the same amounts of money

Shape

identify and describe the properties of 2-D and 3D shapes, including the number of sides and line symmetry in a vertical line

Data handling

Ask and answer questions about totalling and comparing categorical data.

apply addition and subtraction of 2-digit numbers to solve problems involving data