Heamoor School Non-Negotiables (Maths)



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	9eqi 1	9Eq1 2	yeqi 3	9Eq1 4	year 5	9Eq1 8
Autumn						
	• To count to and	• To count in steps of	• • To recognise the	• To recognise the	. ● To read, write,	• To read, write,
	across 100, forwards	2, 3, and 5 from 0,	place value of each	place value of each	order and compare	order and compare
	and backwards,	and count in tens	digit in a three-digit	digit in a four-digit	numbers at least to	numbers at least to
	beginning with 0 or 1,	from any number,	number (hundreds,	number (thousands,	1,000,000 and	10,000,000 and
	or from any given	forward or backward.	tens, ones).	hundreds, tens, and	determine the value	determine the value
	number.	 To recognise the 	 To compare and 	ones).	of each digit.	of each digit.
	To identify and	place value of each	order numbers up to	To identify,	To count forwards	• To round any whole
	represent numbers	digit in a two-digit	1000.	represent and	or backwards in steps	number to a required
	using objects and	number (tens, ones).	 To read and write 	estimate numbers	of powers of 10 for	degree of accuracy.
	pictorial	To identify,	numbers up to 1000	using different	any given number up	To solve number
	representations	represent and	in numerals and in	representations.	to 1,000,000.	problems and
	including the number	estimate numbers	words.	To order and	 To add and subtract 	practical problems
	line, and use the	using different	 To count from 0 in 	compare numbers	whole numbers with	that involve all of the
	language of: equal to,	representations,	multiples of 4, 8, 50	beyond 1000.	more than 4 digits,	above.
	more than, less than	including the number	and 100; finding 10 or	To round any	including using	To perform mental
	(fewer), most, least.	line.	100 more or less than	number to the	efficient written	calculations, including
	 To read and write 	 To compare and 	a given number.	nearest 10, 100 or	methods (columnar	with mixed operations
	numbers from 1 to 20	order numbers from 0	To identify,	1000.	addition and	and large numbers.
	in numerals and	up to 100; use <, >	represent and	To count in	subtraction).	 To solve addition
	words.	and = signs.	estimate numbers	multiples of 6, 7, 9,	To add and subtract	and subtraction multi-
	When given a	To read and write	using different	25, 1000.	numbers mentally	step problems in
	number, identify one	numbers to at least	representations.	• To find 1000 more	with increasingly large	contexts, deciding
	more and one less.	100 in numerals and	 To add and subtract 	or less than a given	numbers.	which
	 To read, write and 	in words.	numbers mentally,	number.	To solve addition	operations and
	interpret	To use place value	including:	To add and subtract	and subtraction multi-	methods to use and
	mathematical	and number facts to	 a three-digit 	numbers with up to	step problems in	why.
	statements involving	solve problems.	number and ones	four digits using the	contexts, deciding	• To perform mental
	addition (+),	 To solve problems 	a three-digit	efficient written	which operations and	calculations, including
	subtraction (–) and	with addition and	number and tens	methods of columnar	methods to use and	with mixed operations
	equals (=) signs.	subtraction:	a three-digit	addition and	why.	and large numbers.
	 To add and subtract 	 Using concrete 	number and	subtraction where	To identify multiples	To identify common
	one-digit and two-	objects and pictorial	hundreds.	appropriate.	and factors, including	factors, common
	one digit and two	Objects and pictorial	nanarcas.	арргорпасс.	and ractors, including	ractors, common

- digit numbers to 20, including zero.
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve simple onestep problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- To represent and use number bonds and related subtraction facts within 20.
- To add and subtract one-digit and two-digit numbers to 20 (9 + 9, 18 9), including zero.
- To recognise and name common 2D and 3D shapes, including:
- 2D shapes (rectangles (including

- representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two- digit numbers; adding three one-digit numbers.
- To show that addition can be done in any order (commutative) and subtraction cannot.
- subtraction cannot.
 To recognise and use the inverse relationship between addition and subtraction and use this to check

- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- ◆ To recall multiplication facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- ◆ To recall multiplication facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally,

- finding all factor pairs of a number, and common factors of two numbers.
- To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors.
- To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- To establish whether a number up to 100 is prime and recall prime numbers up to 19.
- To multiply and divide numbers mentally drawing upon known facts.
- To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- To solve problems

- multiples and prime numbers.
- To solve problems involving addition, subtraction, multiplication and division.
- To multiply multidigit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.
- To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.
- To solve problems involving addition, subtraction, multiplication and division.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

- squares), circles and triangles)
- 3D shapes (cuboids (including cubes), pyramids and spheres).
- To represent and use number bonds and related subtraction facts within 20.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = -9
- To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- To count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens.
- To identify and represent numbers using objects and pictorial representations

- calculations and missing number problems.
- To solve problems with addition and subtraction:
- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a 2-digit number and tens; two two-digit numbers; adding three one-digit numbers.
- To recognise and use the inverse relationship between

- To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (I/mI).
- To measure the perimeter of simple 2D shapes.
- To draw 2D shapes and make 3D shapes using modelling materials; recognise 3D
- shapes in different orientations and describe them with increasing accuracy.
- To identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.
- To add and subtract numbers mentally, including:
- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds.
- To solve problems, including missing number problems,

- including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- To identify lines of symmetry in 2D shapes presented in different orientations.
- To complete a simple symmetric figure with respect to a specific line of symmetry.
- To convert between different units of measure (for example, kilometre to metre; hour to minute).
- To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- To solve problems involving converting from hours to minutes; minutes to

- involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles
- To draw given angles, and measure them in degrees (º).
- To identify:
- angles at a point and one whole turn (total 360°)
- angles at a point on a straight line and 1/2 a turn (total 180º)
- other multiples of 90°.
- To convert between different units of measure (for example, kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).
- To understand and use equivalences between metric units and common imperial

- To illustrate and name parts of circles, including radius, diameter and circumference.
- To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.
- To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa using decimal notation to three decimal places.
- To convert between miles and kilometres.
- To multiply multidigit numbers up to 4 digits by a two-digit

- including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
- To read and write numbers from 1 to 20 in numerals and words.
- When given a number, identify one more and one less.
- To identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
- To read and write numbers from 1 to 20 in numerals and words.
- To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- To represent and use number bonds and related subtraction facts within 20.

- addition and subtraction and use this to check calculations and missing number problems.
- To recall and use multiplication and division facts for the 2,5 and 10 multiplication tables, including recognising odd and even numbers.
- To calculate mathematical statements for multiplication and division within the multiplication tables and write them using multiplication, division and equals signs.
- To recognise and use the inverse relationship between multiplication and division in calculations.
- To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot.

- using number facts, place value, and more complex addition and subtraction.
- To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction.
- To estimate the answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-

- seconds; years to months; weeks to days.
- To estimate, compare and calculate different measures, including money in pounds and pence.
- To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- ◆ To recall multiplication facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by

- units such as inches, pounds and pints.
- To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
- To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
- To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes.
- To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written

- whole number using the efficient written method of long multiplication.
- To divide numbers up to 4 digits by a two-digit whole number using efficient written methods of long division and interpret remainders as whole numbers, remainders, fractions or by rounding as appropriate in the context.
- To compare and order fractions, including fractions >1.
- To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
- To identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100, 1000 where the answers are up to three decimal places.
- To solve problems which require answers to be

- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- To represent and use number bonds and related subtraction facts within 20.
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To compare, describe and solve practical problems for:

- To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
- To identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line.
- To identify and describe the properties of 3D shapes including the number of edges, vertices and faces.
- To identify 2D shapes on the surface of 3D shapes, for example circle on a cylinder and a triangle on a pyramid.
- To compare and sort common 2D and 3D shapes and everyday objects.
- To choose and use appropriate standard units to estimate and

- digit numbers, using mental and progressing to formal written methods.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
- To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
- To compare and order unit fractions, and fractions with the same denominators.
- To solve problems that involve all of the above.
- To tell and write the

- 1; multiplying together three numbers.
- To recognise and use factor pairs and commutativity in mental calculations.
- To multiply twodigit and three-digit numbers by a onedigit number using formal written layout.
 To solve problems

involving multiplying

- and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- To recall multiplication facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To solve problems involving multiplying

- method, including long multiplication for two-digit numbers.
- To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.
- To multiply and divide numbers mentally drawing upon known facts.
- To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- To compare and order fractions whose denominators are all multiples of the same number.
- To identify, name

- rounded to specified degrees of accuracy.
- To perform mental calculations, including with mixed operations and large numbers.
- To use their knowledge of the order of operations to carry out calculations involving the four operations.
- To solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- To solve problems involving addition, subtraction, multiplication and division.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To draw 2D shapes using given dimensions and angles.
- To compare and classify geometric shapes based on their

- lengths and heights (long/short, longer/shorter, tall/short, double/half)
- mass or weight (heavy/light, heavier than, lighter than)
- capacity/volume (full/empty, more than, less than, quarter)
- time (quicker, slower, earlier, later).
- To recognise and know the value of different denominations of coins and notes.
- To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
- To represent and use number bonds and related subtraction facts within 20.
- To add and subtract one-digit and two-digit numbers to 20, including zero.
- To solve one-step problems that involve addition and

- measure length/
 height in any
 direction; mass;
 temperature; volume
 and capacity to the
 nearest appropriate
 unit using rulers,
 scales, thermometers
 and measuring
 vessels.
- To compare and order lengths, mass, volume/capacity and record the results using
- >, < and =.
- To recognise and use the symbols for pounds and pence; combine amounts to make a particular value
- To find different combinations of coins that equal the same amounts of money
- To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
- To count in steps of
 2, 3, and 5 from 0,
 and count in tens
 from any number,

- time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.
- To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight.
- To know the number of seconds in a minute and the number of days in each month, year and leap year.
- To compare durations of events, for example to calculate the time taken by particular events or tasks.
- To interpret and present data using bar charts, pictograms and tables
- To solve one-step and two-step questions such as

- and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
- To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- To recognise and show, using diagrams, families of common equivalent fractions.
- To describe positions on a 2D grid as coordinates in the first quadrant.
- To plot specified points and draw sides to complete a given polygon.

- and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- To read and write decimal numbers as fractions (for example, 0.71 = 71/100).
- To read, write, order and compare numbers with up to three decimal places.
- To read and write decimal numbers as fractions (for example, 0.71 = 71/100).
- To round decimals with two decimal places to the nearest whole numbers and to one decimal place.
- To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents.
- To solve problems involving number up to three decimal places.
- To distinguish between regular and irregular polygons based on reasoning

- properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.
- To recognise, describe and build simple 3D shapes, including making nets.
- To interpret and construct pie charts and line graphs and use these to solve problems.

subtraction, using concrete objects and pictorial representations, and missing number problems.

forward or backward.

● To recognise the place value of each digit in a two-digit number (tens, ones).

- To identify, represent and estimate numbers using different representations, including the number line.
- To compare and order numbers from 0 up to 100; use <, > and = signs.
- To read and write numbers to at least 100 in numerals and in words.
- To use place value and number facts to solve problems.
- To solve problems with addition and subtraction:
- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To add and subtract

'How many more?'
and 'How many
fewer?' using
information
presented in scaled
bar charts and
pictograms and
tables.

- To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction.
- To estimate the answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To write and calculate mathematical statements for multiplication and

• To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.

- To identify acute and obtuse angles and compare and order angles up to two right angles by size.
- To read, write and convert time between analogue and digital 12- and 24-hour clocks.
- To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line

about equal sides and angles.

- To use the properties of rectangles to deduce related facts and find missing lengths and angles.
- To identify 3D shapes including cubes and cuboids from 2D representations.
- To complete, read and interpret information in tables, including timetables.

	using concrete	division	graphs.	
	objects, pictorial	using the	Brupiis.	
	representations, and	multiplication tables		
	mentally, including: a	that they know,		
	two-digit number and	including for two-digit		
	ones; a two-digit	numbers times one-		
	number and tens; two	digit numbers, using		
	two- digit numbers;	mental and		
	adding three one-digit	progressing to formal		
	numbers.	written methods.		
	To show that	 To solve problems, 		
	addition can be done	including missing		
	in any order	number problems,		
	(commutative) and	involving		
	subtraction	multiplication and		
	cannot.	division, including		
	To recognise and	integer scaling		
	use the inverse	problems and		
	relationship between	correspondence		
	addition and	problems in which n		
	subtraction and use	objects are connected		
	this to check	to m objects.		
	calculations and	• To recall and use		
	missing number	multiplication and		
	problems.	division facts for the		
	 To recall and use 	3, 4 and 8		
	multiplication and	multiplication tables.		
	division facts for the	• To write and		
	2,5 and 10	calculate		
	multiplication tables,	mathematical		
	including recognising	statements for		
	odd and even	multiplication and		
	numbers.	division		
	To calculate	using the		
	mathematical	multiplication tables		
	statements for	that they know,		
	multiplication and	including for two-digit		
	division within the	numbers times one-		

multiplication tables	digit numbers, using		
and write them using	mental and		
the multiplication (×),	progressing to formal		
division (÷) and equals	written methods.		
(=) signs.	• To solve problems,		
To recognise and	including missing		
use the inverse	number problems,		
relationship between	involving		
multiplication and	multiplication and		
division in	division, including		
calculations.	integer scaling		
■ To show that	problems and		
multiplication of two	correspondence		
numbers can be done	problems in which n		
in any order	objects are connected		
(commutative) and	to m objects.		
division for one	To count up and		
number by another	down in tenths;		
cannot.	recognise that tenths		
● To solve one-step	arise from dividing an		
problems involving	object into 10 equal		
multiplication and	parts and in dividing		
division, using	one-digit numbers or		
materials, arrays,	quantities by 10.		
repeated addition,	 To recognise and 		
mental methods and	use fractions as		
multiplication and	numbers: unit		
division facts,	fractions and non-unit		
including problems in	fractions with		
contexts.	small denominators.		
 To recognise, find, 	To recognise and		
name and write	show, using diagrams,		
fractions 1/3, 1/4, 2/4	equivalent fractions		
and 3/4.	with small		
To write simple	denominators.		
fractions for example,	To add and subtract		
1/2 of 6 = 3 and	fractions with the		
recognise the	same denominator		

equivalence of two	within one whole		
quarters and one half.	(5/7 + 1/7 = 6/7).		
To order and	To solve problems		
arrange combinations	that involve all of the		
of mathematical	above.		
objects in patterns.	 To tell and write the 		
● To use	time from an		
mathematical	analogue clock,		
vocabulary to	including using Roman		
describe position,	numerals from I		
direction and	to XII, and 12-hour		
movement, including	and 24-hour clocks.		
distinguishing	To estimate and		
between rotation as a	read time with		
turn and in terms of	increasing accuracy to		
right angles for	the nearest minute;		
quarter, half and	record and compare		
three quarter turns	time in terms of		
(clockwise and anti-	seconds, minutes,		
clockwise) and	hours and o'clock; use		
movement in a	vocabulary such as		
straight line.	am/pm, morning,		
● To compare and	afternoon, noon and		
sequence intervals of	midnight.		
time.	To know the		
• To tell and write the	number of seconds in		
time to five minutes,	a minute and the		
including quarter	number of days in		
past/to the hour and	each		
draw the hands on a	month, year and leap		
clock face to show	year.		
these times.	• To compare		
 To interpret and 	durations of events,		
construct simple	for example to		
pictograms, tally	calculate the time		
charts, block diagrams	taken by particular		
and simple tables.	events or tasks.		
To ask and answer	To interpret and		

		simple questions by counting the number of object in each category and sorting the categories by quantity. • To ask and answer questions about totalling and compare categorical data.	present data using bar charts, pictograms and tables. To solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.			
Spring	 To count to and across 100, forwards 	To count in steps of2, 3, and 5 from 0,	• To count from 0 in multiples of 4, 8, 50	● To find 1000 more or less than a given	To read, write, order and compare	 To round any whole number to a required
	and backwards,	and count in tens	and 100; finding 10 or	number.	numbers at least to	degree of accuracy.
	beginning with 0 or 1,	from any number,	100 more or less than	To recognise the	1,000,000 and	To use negative
	or from any given	forward or backward.	a given number.	place value of each	determine the value	numbers in context,
	number.	 To recognise the 	To recognise the	digit in a four-digit	of each digit.	and calculate intervals
	 To count, read and 	place value of each	place value of each	number (thousands,	To count forwards	across zero.
	write numbers to 100	digit in a 2-digit	digit in a three-digit	hundreds, tens, and	or backwards in steps	To solve number
	in numerals, count in	number (tens, ones).	number (hundreds,	ones).	of powers of 10 for	problems and
	multiples of twos,	To identify,	tens, ones).	To order and	any given number up	practical problems
	fives and	represent and	 To compare and 	compare numbers	to 1,000,000.	that involve all of the
	tens.	estimate numbers	order numbers up to	beyond 1000.	To interpret	above.
	When given a	using different	1000.	To identify,	negative numbers in	• To read,
	number, identify one	representations,	To identify,	represent and	context, count	write, order and
	more and one less.	including the number	represent and	estimate numbers	forwards and	compare numbers to
	 To read and write 	line.	estimate numbers	using different	backwards with	at least 10,000 and
	numbers from 1 to 20	To compare and	using different	representations.	positive and negative	determine the value
	in numerals and	order numbers from 0	representations.	To round any	whole numbers	of each digit.
	words.	up to 100; use <, >	To read and write	number to the	through zero.	To perform mental
	• To represent and	and = signs.	numbers up to 1000	nearest 10, 100 or	• To round any	calculations, including
	use number bonds	To read and write	in numerals and in	1000.	number up to	with mixed operations
	and related	numbers to at least	words.	To solve number	1,000,000 to the	and large numbers.
	subtraction facts	100 in numerals and	• To solve number	and practical	nearest 10, 100, 1000,	To solve addition
	within 20.	in words.	problems and	problems that involve	10,000 and	and subtraction multi-

- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- To recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- To sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.
- To tell the time to

- To use place value and number facts to solve problems.
- To solve problems with addition and subtraction:
- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a 2-digit number and tens; two 2-digit numbers: adding three one-digit numbers.
- To show that addition can be done in any order (commutative) and

- practical problems involving these ideas.
- To add and subtract numbers mentally, including:
- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds.
- To estimate the answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

including for two-digit

- To write and why. calculate • To estimate, mathematical compare and statements for multiplication and division using the multiplication tables pence. that they know,
 - To recall multiplication and

- all of the above and with increasingly large positive numbers.
- To read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value.
- To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and
- calculate different measures, including money in pounds and

- 100,000.
- To solve number problems and practical problems that involve all of the above.
- To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).
- To add and subtract numbers mentally with increasingly large numbers.
- To solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To solve problems involving numbers up to three decimal places.
- To multiply and divide numbers mentally drawing

- step problems in contexts, deciding which operations and methods to use and whv.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To perform mental calculations, including with mixed operation and large numbers.
- To identify common factors, common multiples and prime numbers (Children could practise using mental methods that involve using factors, for example.)
- To use their knowledge of the order of operations to carry out calculations involving the four operations.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To add and subtract fractions with different

- the hour and half past the hour and draw the hands on a clock face to show these times.
- To measure and begin to record the following:
- lengths and heights
- mass/weight
- capacity and volume
- time (hours, minutes, seconds).
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using objects and pictorial representations, and missing number problems.
- To count, read and write numbers to 100 in numerals, count in different multiples including ones, twos, fives and tens.
- When given a number, identify one more and one less.
- To identify and represent numbers using objects and

- subtraction cannot.To recognise and use the inverse
- use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
- To solve problems with addition and subtraction:
- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a 2-digit number and tens; two 2-digit numbers; adding three one-digit numbers.
- To show that addition can be done in any order

- numbers times onedigit numbers, using mental and progressing to formal written methods.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.
- To solve problems, including missing

- division facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To multiply twodigit and three-digit numbers by a onedigit number using formal written layout.
- To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- To recall multiplication and division facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying

- upon known facts.
- To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers.
- To recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).
- To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of

- denominators, using the concept of equivalent fractions.
- To associate a fraction with division to calculate decimal fraction equivalents (0.375) for a simple fraction (3/8).
- To multiply simple pairs of proper fractions, writing the answer in its simplest form
- $(1/4 \div 1/2 = 1/8).$
- To divide proper fractions by whole numbers $(1/3 \div 2 = 1/6)$.
- To describe positions on the full co-ordinate grid (all four quadrants).
- To draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
- To recognise that shapes with the same area can have different perimeters and vice versa.
- To calculate the area of parallelograms and triangles.
- To recognise when

- pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- To recognise and name common 2D and 3D shapes, including:
- 2D shapes (rectangles (including squares), circles and

- (commutative) and subtraction cannot.
- To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.
- To recall and use multiplication and division facts for the 2,5 and 10 multiplication tables, including recognising odd and even numbers.
- To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
- To recognise and use the inverse relationship between multiplication and division in calculations.
- To show that multiplication of two numbers can be done

- number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
- To add and subtract amounts of money to give change, using both £ and p in practical contexts.
- To recognise angles as a property of shape and associate angles with turning.
- To 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.
- To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction.
- To estimate the

- by 0 and 1; dividing by 1; multiplying together three numbers.
- To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
- To solve problems involving increasingly harder fractions to calculate quantities, and
 fractions to divide
- fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- To recognise and show, using diagrams, families of common equivalent fractions.
- To recognise and write decimal equivalents of any number of tenths or hundredths.
- To recognise and write decimal equivalents to 1/4; 1/2; 3/4.
- To find the effect of dividing a one- or two-digit number by

- irregular shapes.
- To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5.
- To add and subtract fractions with the same denominator and multiples of the same number.
- To identify, describe and represent the position of a shape following a reflection or translation using the appropriate language, and know that the shape has not changed.
- To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).
- To understand and use basic equivalences between metric units and

- it is necessary to use the formulae for area and volume of shapes.
- To calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3) and extending to other units such as mm3 and km3.
- To multiply multidigit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.
- To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- To perform mental calculations, including with mixed operations

triangles)

- 3D shapes (cuboids (including cubes), pyramids and spheres).
- To describe position, directions and movements, including half, quarter and three- quarter turns.
- To compare, describe and solve practical problems for:
- lengths and heights (long/short, longer/shorter, tall/short, double/half)
- mass or weight (heavy/light, heavier than, lighter than)
- capacity/volume (full/empty, more than, less than, quarter)
- time (quicker, slower, earlier, later).
- To measure and begin to record the following:
- lengths and heights
- mass/weight
- capacity and volume
- time (hours,

- in any order (commutative) and division for one number by another cannot.
- To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
- To identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line.
- To identify and describe the properties of 3D shapes including the number of edges, vertices and faces.
- To identify 2D shapes on the surface of 3D shapes, for example circle on a cylinder and a triangle on a pyramid.
- To choose and use appropriate standard

- answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling

- 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths.
- To round decimals with one decimal place to the nearest whole number.
- To compare numbers with the same number of decimal places up to two decimal places.
- To solve simple measure and money problems involving fractions and decimals to two decimal places.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- To recall multiplication and division facts for multiplication tables up to 12 × 12.
- To recognise and use factor pairs and

- common imperial units such as inches, pounds and pints.
- To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
- To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).
- To add and subtract numbers mentally with increasingly large numbers.
- To solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To multiply and

- and large n as numbers. d • To use t
 - To use their knowledge of the order of operations to carry out calculations involving the four operations.
 - To solve problems involving addition, subtraction, multiplication and division.
 - To multiply onedigit numbers with up to two decimal places by whole numbers.
 - To use written division methods in cases where the answer has up to two decimal places.
 - To solve problems which require answers to be rounded to specified degrees of accuracy.
 - To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison.
 - To recall and use equivalences between simple fractions,

- minutes, seconds).
- To sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- units to estimate and measure length/
 height in any direction (m/cm/mm); mass (kg/g); temperature (°C); volume and capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels.

 To compare and
- To compare and order lengths, mass, volume/capacity and record the results using
- >, < and =.
- To assess the halfterm's work.

- problems and correspondence problems in which n objects are connected to m objects.
- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
- To measure, compare, add and

- commutativity in mental calculations.
- To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- To read, write and convert time between analogue and digital
 12- and 24-hour clocks.
- To solve problems involving converting

- divide whole numbers and those involving decimals by 10, 100 and 1000.
- To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers.
- To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.
- To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical

- decimals and percentages, including different contexts.
- To express missing number problems algebraically.
- To use simple formulae expressed in words.
- To find pairs of numbers that satisfy number sentences involving two unknowns.
- To enumerate all possibilities of combinations of two variables.
- To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places, where appropriate.
- To use read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit and vice versa, using decimal notation to three

	subtract: lengths	from hours to	statements > 1 as a	decimal places.
	(m/cm/mm); mass	minutes; minutes to	mixed number: 2/5 +	To calculate the
	(kg/g);	seconds; years to	4/5 = 6/5 =	area of parallelograms
	volume/capacity	months; weeks to	11/5.	and triangles.
	(I/mI).	days.	 To add and subtract 	To recognise when
	To count up and	• To recall	fractions with the	it is necessary to use
	down in tenths;	multiplication and	same denominator	the formulae for area
	recognise that tenths	division facts for	and multiples of the	and volume of shapes.
	arise from dividing an	multiplication tables	same number.	To interpret and
	object into 10 equal	up to 12 × 12.	To multiply proper	construct pie charts
	parts and in dividing	 To use place value, 	fractions and mixed	and line graphs and
	one-digit numbers or	known and derived	numbers by whole	use these to solve
	quantities by 10.	facts to multiply and	numbers, supported	problems.
	To recognise, find	divide mentally,	by materials and	
	and write fractions of	including: multiplying	diagrams.	
	a discrete set of	by 0 and 1; dividing by	 To recognise the 	
	objects: unit fractions	1; multiplying	per cent symbol (%)	
	and non-unit fractions	together three	and understand that	
	with small	numbers.	per cent relates to	
	denominators.	To multiply two-	"number of parts per	
	 To recognise and 	digit and three-digit	hundred", and write	
	use fractions as	numbers by a one-	percentages as a	
	numbers: unit	digit number using	fraction with	
	fractions and non-unit	formal written	denominator	
	fractions with small	layout.	hundred, and as a	
	denominators.	To solve problems	decimal fraction.	
	 To recognise and 	involving multiplying	To convert between	
	show, using diagrams,	and adding, including	different units of	
	equivalent fractions	using the distributive	measure (kilometre	
	with small	law and harder	and metre; metre and	
	denominators.	multiplication	centimetre;	
	To compare and	problems such as	centimetre and	
	order unit fractions,	which n objects are	millimetre; kilogram	
	and fractions with the	connected to	and gram; litre and	
	same denominators.	m objects.	millilitre).	
	 To solve problems 	To compare and	To understand and	
	that involve all of the	classify geometric	use basic	
	above.	shapes, including	equivalences between	

	To interpret and	quadrilaterals and	metric units and	
	present data using bar	triangles, based on	common imperial	
	charts, pictograms	their properties and	units such as inches,	
	and tables.	sizes.	pounds and pints.	
	To solve one-step	 To identify acute 	To estimate volume	
	and two-step	and obtuse angles and	and capacity	
	questions such as	compare and order	To use all four	
	'How many more?'	angles up to two right	operations to solve	
	and 'How many	angles	problems involving	
	fewer?' using	by size.	measure (e.g. length,	
	information	• To describe	mass, volume, money)	
	presented in scaled	positions on a 2D grid	using decimal	
	bar charts and	as coordinates in the	notation including	
	pictograms and	first quadrant.	scaling	
	tables.	• To describe	• To solve	
		movements between	comparison, sum and	
		positions as	difference problems	
		translations of a given	using information	
		unit to the left/right	presented in a line	
		and up/down.	graph.	
		 To plot specified 		
		points and draw sides		
		to complete a given		
		polygon.		
		 To interpret and 		
		present discrete data		
		using bar charts and		
		continuous data using		
		time graphs.		
		• To solve		
		comparison, sum and		
		difference problems		
		using information		
		presented in bar		
		charts, pictograms,		
		tables and simple line		
		graphs.		
		• To convert between		

				different units of		
				measure (kilometre to		
				metre; hour to		
				minute).		
				• To estimate,		
				compare and		
				calculate different		
				measures, including		
				money in pounds and		
				pence.		
Summer	To count to and		• To count from 0 in	To count in	To count forwards	To read, write,
	across 100, forwards	Number and	multiples of 4, 8, 50	multiples of 6, 7, 9, 25	or backwards in steps	order and compare
	and backwards,	place value:	and 100; finding 10 or	and 1000.	of powers of 10 for	numbers up to
	beginning with 0 or 1,	estimating, counting,	100 more or less than	• To find 1000 more	any given number up	10,000,000 and
	or from any given	comparing and	a given number.	or less than a given	to 1,000,000.	determine the value
	number.	ordering quantities	To recognise the	number.	• To interpret	of each digit.
	• To count, read and	• To count in	place value of each	To count backwards	negative numbers in	To round any whole
	write numbers to 100		•	through zero to	context, count	•
		steps of 2, 3, and 5	digit in a three-digit	_		number to a required
		from 0, and count in	number (hundreds,	include negative	forwards and	degree of accuracy.
	multiples of twos,	tens from any	tens,	numbers.	backwards with	To use negative
	fives and	number, forward or	ones).	To recognise the	positive and negative	numbers in context
	tens.	backward.	To compare and	place value of each	whole numbers	and calculate intervals
	To identify and	• To recognise the	order numbers up to	digit in a four-digit	through zero.	across zero.
	represent numbers	place value of each	1000.	number (thousands,	• To round any	• To solve number
	using objects and	digit in a 2-digit	• To identify,	hundreds, tens, and	number up to	problems and
	pictorial	number (tens, ones).	represent and	ones).	1,000,000 to the	practical problems
	representations	To identify,	estimate numbers	To order and	nearest 10, 100, 1000,	that involve all the
	including the number	represent and	using different	compare numbers	10,000 and	above.
	line, and use the	estimate numbers	representations.	beyond 1000.	100,000.	To perform mental
	language of: equal to,	using different	• To read and write	• To identify,	• To solve number	calculations, including
	more than, less than	representations,	numbers up to 1000	represent and	problems and	with mixed operations
		including the number	in numerals and in	estimate numbers	practical problems	and large numbers.
		line.	words.	using different	that involve all of the	To solve addition
	numbers from 1 to 20	To compare and	 To solve number 	representations.	above.	and subtraction multi-
	in numerals and	order numbers from 0	problems and	To round any	• To read numerals to	step problems in
		up to 100; use <, >	practical problems	number to the	1000 (M) and	contexts, deciding
	· ·	and = signs.	involving these ideas.	nearest 10, 100 or	recognise years	which operations to
	use number bonds	 To read and write 	 To recall and use 	1000.	written in Roman	use and why.

- and related subtraction facts within 20.
- To add and subtract one-digit and two-digit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.
- To recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
- To solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- To measure and

- numbers to at least 100 in numerals and in words.
- To use place value and number facts to solve problems.

Addition and subtraction: using mental calculation strategies • To solve problems with addition and subtraction:

- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods.
- To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a

- multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.
- To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
- To add and subtract numbers mentally, including:
- a three-digit number and ones
- a three-digit number and tens
- a three-digit

- To solve number and practical problems that involve all of the above and with increasingly large positive numbers.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- To estimate, compare and calculate different measures, including money in pounds and pence.
- To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in

- numerals.
- To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).
- To add and subtract numbers mentally with increasingly large numbers.
- To solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To solve problems involving numbers up to three decimal places.
- To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for

- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To multiply multidigit numbers up to 4 digits by a two-digit whole number using the efficient written methods of long multiplication.
- To divide numbers up to 4 digits by two digit whole numbers using the efficient written method of long division and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

- begin to record the following:
- lengths and heights
- mass/weight
- capacity and volume
- time (hours, minutes, seconds).
- To describe position, directions and movements, including half, quarter and three- quarter turns.
- When given a number, identify one more and one less.
- To identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
- To add and subtract one-digit and twodigit numbers to 20, including zero.
- To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial

- 2-digit number and tens; two
 2-digit numbers; adding three one-digit numbers.To show that addition can be done in any order (commutative) and subtraction cannot.
- To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.

Multiplication and division: repeated addition and subtraction, arrays, grouping and using times tables facts

- To recall and use multiplication and division facts for the 2,5 and 10 multiplication tables, including recognising odd and even numbers.
- To calculate mathematical statements for multiplication and division within the

- number and hundreds.
- To estimate the answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction.
- To estimate the answer to a calculation and use inverse operations to check answers.
- To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
- To draw 2D shapes and make 3D shapes using modelling

- contexts, deciding which operations and methods to use and why.
- To recall multiplication and division facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To recognise and use factor pairs and commutativity in mental calculations.
- To multiply twodigit and three-digit numbers by a onedigit number using formal written layout.
- To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to
- To count up and

m objects.

- two-digit numbers.

 To divide number
 - To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.
 - To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
 - To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5.
 - To add and subtract fractions with the same denominator and multiples of the same number.
 - To know angles are measured in degrees; estimate and compare

- To multiply simple pairs of proper fractions, writing the answer in its simplest form.
- To divide proper fractions by whole numbers.
- To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison.
- To recall and use equivalences between simple fractions, decimals and percentages including in different contexts.
- To solve problems involving the relative size of two quantities where missing values can be found by using integer multiplication and division facts.
- To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
- To solve problems involving similar shapes where the

- representations, and missing number problems.
- To recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
- To solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- To measure and begin to record the following:
- lengths and heights
- mass/weight
- capacity and volume
- time (hours, minutes, seconds).
- To recognise and use language relating to dates, including days of the week,

- multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
- To recognise and use the inverse relationship between multiplication and division in calculations.
- To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot.
- To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

Fractions: finding fractions of quantities, shapes and sets of objects ● To recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4.

- materials; recognise 3D shapes in different orientations and describe them with increasing accuracy.
- To recognise angles as a property of shape and associate angles with turning.
- To 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.
- To identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.
- To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).

- down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
- To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
- To recognise and show, using diagrams, families of common equivalent fractions.
- To add and subtract fractions with the same denominator.
- To convert between different units of measure (kilometre to metre; hour to minute).
- To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- To find the area of rectilinear shapes by counting.

- acute, obtuse and reflex angles
- To draw given angles, and measure them in degrees (°).
- To identify:
- angles at a point and one whole turn (total 360º)
- angles at a point on a straight line and 1/2 a turn (total 180º)
- other multiples of 90°.
- To use the properties of a rectangle to deduce related facts and find missing lengths and angles.
- To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- To estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water).
- To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal

- scale factor is known or can be found.
- To multiply multidigit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.
- To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
- To perform mental calculations, including with mixed operations and large numbers.
- To use their knowledge of the order of operations to carry out calculations involving the four operations.
- To solve addition and subtraction multistep problems in contexts, deciding which

- weeks, months and years.
- To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
- To order and arrange combinations of objects and shapes in patterns.
- To recognise and name common 2D and 3D shapes, including:
- 2D shapes (rectangles (including squares), circles and triangles)
- 3D shapes (cuboids (including cubes), pyramids and spheres).

• To write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of two quarters and one half.

Geometry: position and direction

- Measures: time To use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anticlockwise) and movement in a straight line.
- To 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.

Statistics: solving problems that involve collecting data

- To estimate, compare and calculate different measures, including money in pounds and pence.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- To recall multiplication and division facts for multiplication tables up to 12 × 12.
- To recognise and use factor pairs and commutativity in mental calculations.
- To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.
- To convert between

- notation including scaling
- To solve problems involving converting between units of time.
- To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).
- To add and subtract numbers mentally with increasingly large numbers.
- To solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers.
- To multiply and divide numbers mentally drawing upon known facts.
- To identify multiples

- operations and methods to use and why.
- To solve problems involving addition, subtraction, multiplication and division.
- To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- To express missing number problems algebraically.
- To use simple formulae expressed in words.
- To generate and describe linear number sequences.
- To find pairs of numbers that satisfy number sentences involving two unknowns.
- To enumerate all possibilities of combinations of two variables.
- To multiply simple pairs of proper fractions, writing the answer in its simplest form

 $(1/4 \div 1/2 = 1/8).$

in tallies, tables and pictograms ● To interpret and construct simple pictograms, tally charts, block diagrams and simple tables.

- To ask and answer simple questions by counting the number of object in each category and sorting the categories by quantity.
- To ask and answer questions about totalling and compare categorical data.

Assess and Review

● To assess
the half-term's work.

Year 2 Medium Term Planning Summer 1

Date Week Topic Curriculum
Objective

Number and place value: estimating, counting, comparing and ordering quantities

different units of measure (kilometre to metre; hour to minute).

- To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- To find the area of rectilinear shapes by counting.
- To estimate, compare and calculate different measures, including money in pounds and pence.
- To read, write and convert time between analogue and digital
 12- and 24-hour clocks.
- To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and

and factors, including finding all factor pairs of a number, and common factors of two numbers.

- To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors.
- To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- To read, write, order and compare numbers with up to three decimal places.
- To read and write decimal numbers as fractions (for example, 0.71 = 71/100).
- To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents.
- To round decimals with two decimal

- To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
- To add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions.
- To solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison.
- To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
- To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.
- To use, read, write

- To recognise the place value of each digit in a 2-digit number (tens, ones).
- To identify, represent and estimate numbers using different representations, including the number line.
- To compare and order numbers from 0 up to 100; use <, > and = signs.
- To read and write numbers to at least 100 in numerals and in words.

Addition and subtraction: using mental calculation strategies • To solve problems with addition and subtraction:

- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written

- subtraction where appropriate.
- To estimate and use inverse operations to check answers to a calculation.
- To solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why.
- To recall multiplication and division facts for multiplication tables up to 12 × 12.
- To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- To recognise and use factor pairs and commutativity in mental calculations.
- To multiply twodigit and three-digit numbers by a onedigit number using formal written layout.
- To solve problems involving multiplying

- places to the nearest whole numbers and to one decimal place.
- To recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction.
- To solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 4/5 and those with a denominator of a multiple of 10 or 25.
- To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
- To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and

- and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a large unit and vice versa, using decimal notation to three decimal places.
- To interpret and construct pie charts and line graphs and use these to solve problems.
- To calculate and interpret the mean as an average.

methods.

- To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a 2-digit number and tens; two 2-digit numbers; adding three one-digit numbers.
- To show that addition can be done in any order (commutative) and subtraction cannot.
- To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.

Multiplication and division: repeated addition and subtraction, arrays, grouping and using times tables facts

• To recall and use multiplication and division facts for the 2,5 and 10 multiplication tables,

and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects.

- To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- To identify acute and obtuse angles and compare and order angles up to two right angles by size.
- To identify lines of symmetry in 2D shapes presented in different orientations.
- To describe positions on a 2D grid as coordinates in the first quadrant.
- To describe movements between positions as translations of a given unit to the left/right and up/down.
- To plot specified points and draw sides to complete a given

estimate the area of irregular shapes.

- To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- To complete, read and interpret information in tables, including timetables.
- To solve comparison, sum and difference problems using information presented in a line graph.

including recognising	 polygon.	
odd and even	To interpret and	
numbers.	present discrete and	
To calculate	continuous data using	
mathematical	appropriate graphical	
statements for	methods, including	
multiplication and	bar charts and time	
division within the	graphs.	
multiplication tables	• To solve	
and write them using	comparison, sum and	
the multiplication (×),	difference problems	
division (÷) and equals	using information	
(=) signs.	presented in bar	
To recognise and	charts, pictograms,	
use the inverse	tables and simple line	
relationship between	graphs.	
multiplication and	S. a.b. io.	
division in		
calculations.		
 To solve problems 		
involving		
multiplication and		
division, using		
materials, arrays,		
repeated addition,		
mental methods and		
multiplication and		
division facts,		
including problems in		
contexts.		
Fractions:		
finding fractions of		
quantities, shapes and		
sets of objects ● To		
recognise, find, name		
and write fractions		
1/3, 1/4, 2/4 and 3/4.		

 To write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of two quarters and one half. Geometry: properties of 3D and 2D shape ● To identify and describe the properties of 2D and 3D shapes, including the number of sides, symmetry in a vertical line, edges, vertices, and faces. To identify 2D shapes on the surface of 3D shapes, for example circle on a cylinder and a triangle on a pyramid. To compare and sort common 2D and 3D shapes and everyday objects. To solve one-step problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

	Measures:		
	length, mass		
	(weight), capacity and		
	money • To choose		
	and use appropriate		
	standard units to		
	estimate and measure		
	length/ height in any		
	direction; mass;		
	temperature; volume		
	and capacity to the		
	nearest appropriate		
	unit using rulers,		
	scales, thermometers		
	and measuring		
	vessels.		
	To compare and		
	order lengths, mass,		
	volume/capacity and		
	record the results		
	using		
	>, < and =.		
	 To recognise and 		
	use symbols for		
	pounds (£) and pence		
	(p); combine amounts		
	to make a particular		
	value.		
	 To find different 		
	combinations of coins		
	to equal the same		
	amounts of money		
	 To solve simple 		
	problems in a		
	practical context		
	involving addition and		
	subtraction of money		
	Tanada di Tironey		

	of the same unit,		
	including giving		
	change.		
	• To recognise the		
	place value of each		
	digit in a 2-digit		
	number (tens, ones).		
	■ To identify,		
	represent and		
	estimate numbers		
	using different		
	representations,		
	including the number		
	line.		
	● To compare and		
	order numbers from 0		
	up to 100; use <, >		
	and = signs.		
	● To read and write		
	numbers to at least		
	100 in numerals and		
	in words.		
	● To use place value		
	and number facts to		
	solve problems.		
	• To solve problems		
	with addition and		
	subtraction:		
	Using concrete		
	objects and pictorial		
	representations,		
	including those		
	involving numbers,		
	quantities and		
	measures		
	Applying their		
	increasing knowledge		
	of mental and written		
I	or mental and written		

methods.	
• To add and subtract	
using concrete	
objects, pictorial	
representations, and	
mentally, including: a	
two-digit number and	
ones; a 2-digit	
number and tens; two	
2-digit numbers;	
adding three one-digit	
numbers.	
● To recognise and	
use the inverse	
relationship between	
addition and	
subtraction and use	
this to check	
calculations and	
missing number	
problems.	
• To recall and use	
multiplication and	
division facts for the	
2,5 and 10	
multiplication tables,	
including recognising	
odd and even	
numbers.	
■ To calculate	
mathematical mathematical	
statements for	
multiplication and	
division within the	
multiplication tables	
and write them using	
the multiplication (×),	
division (÷) and equals	

()	
(=) signs.	
To recognise and	
use the inverse	
relationship between	
multiplication and	
division in	
calculations.	
To solve problems	
involving	
multiplication and	
division, using	
materials, arrays,	
repeate addition,	
mental methods and	
multiplication and	
division facts,	
including problems in	
contexts.	
● To recognise, find,	
name and write	
fractions 1/ , 1/ , 2/	
and 3/3. 4 4	
4	
● To write simple	
fractions for example,	
1/2 of 6 = 3 and	
recognise the	
equivalence of	
two quarters and one	
half.	
● To order and	
arrange combinations	
of mathematical	
objects in patterns.	
• To use	
mathematical	
vocabulary to	
describe position,	

direction and		
movement, including		
distinguishing		
between rotation as a		
turn and in terms of		
right angles for		
quarter, half and		
three quarter turns		
(clockwise and anti-		
clockwise) and		
movement in a		
straight line.		
● To compare and		
sequence intervals of		
time.		
● To 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.		
● To interpret and		
construct simple		
pictograms, tally		
charts, block diagrams		
and simple tables.		
● To ask and answer		
simple questions by		
counting the number		
of objects in each		
category and sorting		
the categories by		
quantity.		
● To ask and answer		
questions about		
totalling and compare		
 categorical data.		
<u> </u>	 	