



Hear⁺wood
Church of England Academy Trust

Abacus Maths Scheme of Work

Reception – Year 6



Abacus Reception Maths

Autumn 1		
Week	Unit	Objectives
1	Mathematics focus: Numbers	Select the correct numeral to represent 1 to 5, then 1 to 10 objects. Count reliably with numbers from 1 to 20. Record, using marks that they can interpret and explain. Recognise numerals 1 to 5.
2	Mathematics focus: Shape, Space and Measures	Use everyday language related to time. Recognise, create and describe patterns.
3	Mathematics focus: Number; Shape, Space and Measures	Use ordinal numbers in different contexts. Count reliably with numbers from 1 to 20. Recognise, create and describe patterns. Say the number that is one more than a given number. Place numbers in order and say which number is one more or one less than a given number.
4	Mathematics focus: Numbers	In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Say the number that is one more than a given number
5	Mathematics focus: Shape, Space and Measures	Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Use familiar objects and common shapes to create and recreate patterns and build models. .Recognise, create and describe patterns.

Autumn 2		
6	Mathematics focus: Number; Shape, Space and Measures	Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Recognise, create and describe patterns. Estimate how many objects they can see and checks by counting them. Count an irregular arrangement of up to ten objects. Count reliably with numbers from 1 to 20. Recognise numerals 1 to 5. Place numbers in order and say which number is one more or one less than a given number.
7	Mathematics focus: Shape, Space and Measures	Order two or three items by length or height. Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems
8	Mathematics focus: Numbers	Count actions or objects which cannot be moved. Recognise numerals 1 to 5. Count reliably with numbers from 1 to 20. Estimate how many objects they can see and checks by counting them. Count an irregular arrangement of up to ten objects. Solve problems, including doubling, halving and sharing.
9	Mathematics focus: Numbers	Say the number that is one more than a given number. Count an irregular arrangement of up to ten objects. Place numbers in order and say which number is one more or one less than a given number. In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Count reliably with numbers from 1 to 20.

10	Mathematics focus: Shape, Space and Measures	Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. Solve problems, including doubling, halving and sharing. Use familiar objects and common shapes to create and recreate patterns and build models. Explore characteristics of everyday objects and shapes and use mathematical language to describe them.
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Spring 1

Week	Unit	Objectives
11	Mathematics focus Shape, Space and Measures/Numbers :	Order two or three items by length or height Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems Solve problems, including doubling, halving and sharing
12	Mathematics focus: Numbers	Use ordinal numbers in different contexts Estimate how many objects they can see and checks by counting them Count an irregular arrangement of up to ten objects. Solve problems, including doubling, halving and sharing. Count reliably with numbers from 1 to 20. Recognise numerals 1 to 10.
13	Mathematics focus Number	Place numbers in order and say which number is one more or one less than a given number. In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting.
14	Mathematics focus: Shape, Space and Measures	Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Recognise, create and describe patterns. Solve problems, including doubling, halving and sharing.
15	Mathematics focus: Numbers	In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Solve problems, including doubling, halving and sharing. Using quantities and objects add and subtract two single-digit numbers and count on or back to find the answer.

Spring 2

Week	Unit	Objectives
16	Mathematics focus: Numbers	Select the correct numeral to represent 1 to 5, then 1 to 10 objects. Count reliably with numbers from 1 to 20. Count objects to 10, and beginning to count beyond 10.
17	Mathematics focus: Shape, Space and Measures	Can describe their relative position such as 'behind' or 'next' to. Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems. Solve problems, including doubling, halving and sharing. Respond to instructions involving a two-part sequence
18	Mathematics focus: Numbers	Find the total number of items in two groups by counting all of them. Use the language of 'more' and 'fewer' to compare two sets of objects. Using quantities and objects add and subtract two single-digit numbers and count on or back to find the answer.
19	Mathematics focus: Numbers	Place numbers in order and say which number is one more or one less than a given number. Count reliably with numbers from 1 to 20. In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting.
20	Mathematics focus: Shape, Space and Measures	Use everyday language related to time. Solve problems, including doubling, halving and sharing.

Summer 1		
Week	Unit	Objectives
21	Mathematics focus: Numbers	Count reliably with numbers from 1 to 20. Recognise numerals 1 to 5. Solve problems, including doubling, halving and sharing. Place numbers in order and say which number is one more or one less than a given number. Count reliably with numbers from 1 to 20.
22	Mathematics focus: Numbers	In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Use the language of 'more' and 'fewer' to compare two sets of objects. In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Use the language of 'more' and 'fewer' to compare two sets of objects. Recognise numerals 1 to 5. Solve problems, including doubling, halving and sharing. Count reliably with numbers from 1 to 20.
23	Mathematics focus: Shape, Space and Measures	Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Recognise, create and describe patterns.
24	Mathematics focus: Shape, Space and Measures	Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. Explore characteristics of everyday objects and shapes and use mathematical language to describe them. Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems.
25	Mathematics focus: Numbers	Numbers Using quantities and objects add and subtract two single-digit numbers and count on or back to find the answer. Numbers In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting.

Summer 2		
Week	Unit	Objectives
26	Mathematics Focus- Shape, space, measure	Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems.
27	Mathematics Focus shape, space, measure	Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems. Order two items by weight or capacity.
28	Mathematics Focus Numbers	Use the language of 'more' and 'fewer' to compare two sets of objects. Recognise numerals 1 to 20. Count objects to 10, and beginning to count beyond 10. Estimate how many objects they can see and checks by counting them.
29	Mathematics Focus Numbers	Use the language of 'more' and 'fewer' to compare two sets of objects. Count objects to 10, and beginning to count beyond 10. Estimate how many objects they can see and checks by counting them.
30	Mathematics Focus Numbers/ shape, space, measure	Estimate how many objects they can see and checks by counting them. Place numbers in order and say which number is one more or one less than a given number. Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and solve problems.



Abacus Year 1 Maths

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Number and place value (NPV); Mental addition and subtraction (MAS)	Count up to 20 objects (match number to object); estimate and count up to 30 objects; count on and back and order numbers to 10; recognise domino/dice arrays without counting; identify a number 1 more (next number in count)
2	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Find pairs that make 5; subitise to 5; find pairs that make 6; subitise to 6; find pairs that make 10; subitise fingers to 10; match pairs to 5, 6 and 10 to number sentences; find missing numbers in number sentences
3	Mental addition and subtraction (MAS)	Double numbers 1 to 5; find 1 and 2 more; count back 1 and begin to find 1 less
4	Geometry: properties of shapes (GPS); Geometry: position and direction (GPD); Statistics (STA)	Recognise, name and describe squares, rectangles, circles and triangles; recognise basic line symmetry; sort 2D shapes according to their properties, using Venn diagrams and Carroll diagrams
5	Number and place value (NPV)	Read and write numbers and number-names to 20; compare and order numbers to 20; identify 1 more and 1 less; estimate sets of objects, count to check and order sets according to size; understand 0 as the empty set

Autumn Term 2		
Wk	Strands	Weekly Summary
6	Number and place value (NPV)	Understand and then make teen numbers (10 and some 1s); compare and order numbers to 20, then 30; find the number between two numbers with a difference of 2; understand and use ordinal numbers
7	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Revise bonds to 5, 6 and 10; find pairs which make 7; use addition facts for 5, 6 and 10 to solve subtractions; use number facts for 5, 6 and 10 to solve word problems
8	Geometry: position and direction (GPD); Measurement (MEA)	Describe position and direction using common words (including half turns); compare lengths and heights; estimate, compare and measure lengths using uniform non-standard and standard units
9	Mental addition and subtraction (MAS); Mental multiplication and division (MMD)	Add 1, 2 and 3 by counting on; subtract 1, 2, 3 or more by counting back; begin to add three small numbers by spotting bonds to 10 or doubles (1-6)
10	Number and place value (NPV); Measurement (MEA)	Compare and order numbers to 20; recognise coins and know values (up to £2); begin to make amounts in pence; understand teen numbers are 10 and some 1s

Spring Term 1		
Wk	Strands	Weekly Summary
11	Number and place value (NPV); Mental addition and subtraction (MAS)	Say the number one more or less and two more or less using a number line or a 100 grid; locate 2-digit numbers on a 100 grid and a 1-100 bead string; read, write and say 2-digit numbers and understand them as some tens and some ones
12	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD)	Revise pairs to 5, 6, 7, 10 and doubles to double 6; derive subtraction facts; understand a symbol being used for an unknown; use number facts to solve simple addition and subtraction word problems; find pairs of numbers with a total of 8
13	Mental addition and subtraction (MAS)	Add by putting the larger number first and counting on (numbers up to 100), spotting unit patterns; count on from 2-digit numbers; add a 1-digit number to a 2-digit number
14	Geometry: properties of shapes (GPS); Statistics (STA); Measurement (MEA)	Name, recognise and know the properties of 3D shapes: cube, cuboid, cone, cylinder and sphere; begin to sort 3D shapes according to properties; order and name the days of the week and months of the year; recognise and name the seasons
15	Number and place value (NPV); Mental multiplication and division (MMD)	Count on and back in tens from any number; begin to count in 5s and 2s recognising multiples of 5 end in 5 and 0; chn begin to count in 2s; estimate a number of objects within a range and count by grouping into 10s or 5s

Spring Term 2		
Wk	Strands	Weekly Summary
16	Number and place value (NPV); Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Recognise odd and even numbers; count objects in 5s and 10s and begin to say 5 lots and 10 lots; find half, quarter and three quarters of shapes; begin to know that two halves and four quarters are a whole and that two quarters is a half
17	Mental addition and subtraction (MAS); Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Find and begin to know doubles to double 10; revise pairs to 5, 6, 7, 8, 9 and 10 and derive related subtraction facts; use knowledge of pairs of 10 to make pairs to 20; use number facts to solve word problems
18	Measurement (MEA)	Relate units of time weeks, days, hours; divide the days up into parts; read and write times to the hour; begin to have a notion of how long an hour is and how long a minute is; tell the time (o'clock and half past) on analogue and digital clocks; measure using uniform units (cubes and rulers)
19	Mental addition and subtraction (MAS)	Add a 1-digit number by counting on from a 2-digit number, not crossing 10s at first, then beginning to cross 10s; subtract a 1-digit number by counting back initially from numbers up to 30 (not crossing 10s) and then generally from a 2-digit number (not crossing 10s) and from multiples of 10
20	Number and place value (NPV); Mental addition and subtraction (MAS)	Locate 2-digit numbers on a 100-square; begin to recognise 2-digit numbers as some 10s and 1s; make 2-digit numbers using 10p and smaller coins; find 1 more or 1 less than any number to 100; find 10 more than any number to 90; find 10 less than any number to 100

Summer Term 1		
Wk	Strands	Weekly Summary
21	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Find 1 more, 1 less, 10 more, 10 less than any 2-digit number; explore patterns on the 100-square; understand place value in 2-digit numbers and identify 10s and 1s
22	Mental addition and subtraction (MAS)	Use number facts to add and subtract 1-digit numbers to/from 2-digit numbers; add pairs of 1-digit numbers with totals above 10; sort out additions into those you 'just know' and those you need to work out
23	Mental addition and subtraction (MAS)	Add three small numbers, spotting pairs to 10 and doubles; add and subtract 10 to and from 2-digit numbers
24	Measurement (MEA); Statistics (STA)	Compare weights and capacities using direct comparison; measure weight and capacity using uniform non-standard units; complete tables and block graphs, recording results and information; make and use a measuring vessel for capacity
25	Number and place value (NPV); Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Measurement (MEA)	Find half of all numbers to 10 and then to 20; identify even numbers and begin to learn halves; recognise halves and quarters of shapes and begin to know $2/2=1$, $4/4=1$ and $2/4=1/2$; recognise, name and know value of coins 1p-£2 and £5 and £10 notes; solve repeated addition problems using coins; make equivalent amounts using coins

Summer Term 2		
Wk	Strands	Weekly Summary
26	Number and place value (NPV)	Locate 2-digit numbers on a beaded line and 100-square; compare and order 2-digit numbers up to 100 and say a number between two numbers; identify 10s and 1s in 2-digit numbers and solve place-value additions
27	Number and place value (NPV); Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Recognise odd and even numbers; count in 2s, 5s and 10s, look for patterns; multiply by 2, 5, 10 by counting in groups/sets; find doubles to double 10 and related halves; halve odd numbers up to 10
28	Measurement (MEA); Statistics (STA); Geometry: properties of shapes (GPS); Geometry: position and direction (GPD)	Tell the time to the half hour and quarter hour on analogue clocks and begin to read these times on digital clocks; revise months of the year; read, interpret and create a pictogram; begin to recognise and read block graphs; measure lengths using non-standard, uniform units; recognise and name simple 2D shapes and continue repeating patterns
29	Mental addition and subtraction (MAS)	Use number facts to add and subtract 1-digit numbers to and from 2-digit numbers; find change from 10p and from 20p
30	Number and place value (NPV); Mental addition and subtraction (MAS); Mental multiplication and division (MMD)	Locate 2-digit numbers on a bead string and a 1-100 square; order numbers to 100; identify 10s and 1s in 2-digit numbers; say or write 1 more and 1 less and 10 more and 10 less than any number to 100; explore patterns in 10s, 5s and 2s on a 9x9 grid; count in tens from any given number



Abacus Year 2 Maths

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Estimate and count a number of objects up to 100; locate numbers on 0–100 beaded lines and 1–100 squares; compare pairs of numbers and find a number in between; order three numbers, order 2-digit numbers
2	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Revise number bonds to 6, 7, 8, 9 and 10; know number bonds to 10 and begin to learn related subtraction facts; know multiple of 10 number bonds to 100, learn bonds to 20, rehearse number bonds to 10 and 20 using stories
3	Mental multiplication and division (MMD); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Double numbers to double 15, use patterns in number bonds, use number bonds to solve more difficult additions, to subtract and to solve additions bridging 10
4	Geometry: properties of shapes (GPS); Statistics (STA)	Sort 2D shapes according to symmetry properties using Venn diagrams, identify right angles and sort shapes using Venn diagrams, recognise squares, rectangles, circles, triangles, ovals and hexagons, investigate which tessellate, sort shapes and objects using a two-way Carroll diagram
5	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Begin to mark numbers on a landmarked line, compare and order numbers, using $<$ and $>$ signs, work systematically to find all possible inequalities, find 1 and 10 more or less using the 100-square, find 10 more and 10 less than any 2-digit number

Autumn Term 2		
Wk	Strands	Weekly Summary
6	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Know and use ordinal numbers; understand that 2-digit numbers are made from some 10s and some 1s; Understand place value using 10p and 1p coins; find and record all possible amounts using 10p and 1p coins; find 10p more and 10p less; Find 10 more and 10 less
7	Mental addition and subtraction (MAS); Number and place value (NPV)	Add and subtract 10, 20 and 30 to any 2-digit number; Add and subtract 11, 21, 12 and 22 to any 2-digit number; Solve addition and subtractions by counting on and back in 10s then in 1s; solve addition and subtraction problems using concrete and pictorial representations
8	Geometry: position and direction (GPD); Measurement (MEA)	Understand and use terms and vocabulary associated with position, direction and movement; Measure lengths using uniform units; Begin to measure in centimetres and metres
9	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD)	Add and subtract 2-digit numbers; Solve addition and subtraction problems using concrete and pictorial representations; Add near doubles to double 15; Add several small numbers spotting near doubles or pairs to 10, etc.
10	Mental multiplication and division (MMD); Measurement (MEA); Problem solving, reasoning and algebra (PRA)	Count in 2s, 5s and 10s from zero; Count in multiples of 2p, 5p and 10p; Number sequences of 2s, 5s and 10s; Find the totals of coins and ways to make an amount; Use coins to make given amounts of money

Spring Term 1		
Wk	Strands	Weekly Summary
11	Number and place value (NPV); Mental addition and subtraction (MAS)	Place value and ordering 2-digit numbers; place value additions and subtractions; add and begin to subtract 9, 10 and 11
12	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Revise number bonds to 10; begin to bridge 10; subtract from 10 and 20; use number facts to find the complement to ten; find a difference between two numbers by counting on
13	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Rehearse complements to multiples of 10; find differences using a number line; find change from 10p and 20p, and from £10 to £20 by counting up and using bonds to 10 and 20; add two 2-digit numbers by counting on
14	Geometry: properties of shapes (GPS); Geometry: position and direction (GPD); Measurement (MEA)	Recognise and identify properties (including faces and vertices) of 3D shapes; sort according to properties including number of faces; name the 2D shapes of faces of 3D shapes; tell the time to the nearest quarter on analogue and digital clocks
15	Number and place value (NPV)	Order 2-digit numbers and revise the < and > signs; locate 2-digit numbers on a landmarked line and grid; round 2-digit numbers to nearest 10; estimate a quantity <100 within a range

Spring Term 2		
Wk	Strands	Weekly Summary
16	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Revise doubles and corresponding halves to 15; find half of odd and even numbers to 30; Revise and recognise 1/2s, 1/4s, 1/3s and 2/3s of shapes; place 1/2s on a number line; count in 1/2s and 1/4s; understand and write mixed numbers
17	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Count in 2s, 5s and 10s to solve multiplication problems and find specified multiples; introduce the \times sign; record the 2, 5 and 10 times-tables; investigate multiplications with the same answer; write multiplications to go with arrays, rotate arrays to show they are commutative
18	Measurement (MEA); Statistics (STA)	Tell the time to the nearest quarter of an hour using analogue and digital clocks; understand the relationship between seconds, minutes and hours and use a tally chart; interpret and complete a pictogram or block graph where one block or symbol represents one or two things
19	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Revise 2, 5 and 10 times-tables; revise arrays and hops on the number line; multiply by 2, 3, 4, 5 and 10; arrange objects into arrays and write the corresponding multiplications; make links between grouping and multiplication to begin to show division; write divisions as multiplications with holes in and use the \div sign
20	Measurement (MEA); Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Recognise all coins, know their value, and use them to make amounts; recognise £5, £10, £20 notes; make amounts using coins and £10 note; write amounts using $\pounds.p$ notation; order coins 1p – £2 and notes £5 – £20; add several coins writing totals in $\pounds.p$ notation (no zeros in 10p place); add two amounts of pence, using counting on in 10s and 1s; add two amounts of money, beginning to cross into £s

Summer Term 1		
Wk	Strands	Weekly Summary
21	Number and place value (NPV); Mental addition and subtraction (MAS)	Locate, order and compare 2-digit numbers on 0-100 landmarked lines and on the 1-100 square; use < and > signs; locate numbers on an empty 0-100 line; introduce numbers 101 to 200 and count in 100s to 1000; add 2-digit numbers by counting on in 10s and 1s; subtract 2-digit numbers by counting back in 10s and 1s
22	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Use doubles and number bonds to add three 1-digit numbers; use number facts to 10 and 20 in number stories; find complements to multiples of 10; understand subtraction as difference and find this by counting up; find small differences either side of a multiple of 10
23	Mental addition and subtraction (MAS)	Add and subtract 1-digit numbers to and from 2-digit numbers; subtract 2-digit numbers by counting back in tens and ones; add two 2-digit numbers by counting in 10s, then adding 1s; add 2-digit numbers using 10p and 1p coins (partitioning, answers less than 100); add 2-digit numbers using place-value cards (partitioning, answers more than 100)
24	Measurement (MEA); Statistics (STA)	Measure weight using standard or uniform non-standard units; draw a block graph where one square represents two units; weigh items using 100g weights using scales marked in multiples of 1kg or 100g; measure capacity using uniform non-standard units; measure capacity in litres and in multiples of 100ml
25	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Double multiples of 10 and 5 (answers less than 100); double 2-digit numbers ending in 1, 2, 3 or 4 (answers less than 100); find a quarter of numbers up to 40 by halving twice; begin to find $\frac{3}{4}$ of numbers; find $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ of amounts (sharing); spot patterns and make predictions when finding a third of numbers

Summer Term 2		
Wk	Strands	Weekly Summary
26	Mental addition and subtraction (MAS); Number and place value (NPV); Measurement (MEA); Problem solving, reasoning and algebra (PRA)	Count back in 10s and 1s to solve subtraction (not crossing 10s) and check subtraction using addition, beginning to understand that addition undoes subtraction and vice versa; add three or more small numbers using number facts; record amounts of money using £.p notation including amounts with no 10s or 1s; find more than one way to solve a money problem
27	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Count in 3s, recognising numbers in the 3 times-table; write multiplications to go with arrays and use arrays to solve multiplication problems; understand that multiplication is commutative and that division and multiplication are inverse operations; solve divisions as multiplications with a missing number; count in 2s, 3s, 5s and 10s to solve divisions and solve division problems in contexts
28	Measurement (MEA)	Measure and estimate lengths in centimetres; tell the time involving multiples of 5 minutes past the hour and 5 minutes to the hour; tell time to 5 minutes; begin to say the time 10 minutes later
29	Mental addition and subtraction (MAS); Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Partition to add two 2-digit numbers; find the difference between two 2-digit numbers; multiply two numbers using counting in steps of 2, 3, 5 and 10; solve division problems by counting in steps of 2, 3, 5 and 10
30	Number and place value (NPV); Mental addition and subtraction (MAS)	Compare two 2-digit numbers and find bonds to 100 using thermometers; revise place value in 2-digit numbers, numbers between 100 and 200, and 3-digit numbers (including zeros in the 10s and 1s places)



Abacus Year 3 Maths

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Use multiple of 5 and 10 bonds to 100 to solve additions and subtractions; add and subtract 1-digit numbers to and from 2-digit numbers
2	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Compare and order 2- and 3- digit numbers; count on and back in 10s and 1s; add and subtract 2-digit numbers; solve problems using place value
3	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA)	Know multiplication and division facts for the 5, 10, 2, 4 and 3 times-tables; doubling and halving
4	Problem solving, reasoning and algebra (PRA); Measurement (MEA); Geometry: properties of shapes (GPS)	Know and understand the calendar, including days, weeks, months, years; tell the time to the nearest 5 minutes on analogue and digital clocks; know the properties of 3D shapes
5	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Comparing, ordering and understanding place value of 2- and 3-digit numbers; subtracting from 2- and 3-digit numbers; using prediction to estimate calculations

Autumn Term 2		
Wk	Strands	Weekly Summary
6	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA)	Doubling and halving numbers up to 100 using partitioning; understanding fractions and fractions of numbers
7	Measurement (MEA); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Use money to add and subtract and record using the correct notation and place value; add and subtract 2-digit numbers using partitioning; add three 2-digit numbers by partitioning and recombining.
8	Measurement (MEA)	Choose an appropriate instrument to measure a length and use a ruler to estimate, measure and draw to the nearest centimetre; know 1 litre = 1000 ml; estimate and measure capacity in millilitres
9	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Place 2- and 3-digit numbers on a number line; round 3-digit numbers to nearest 100; use counting up to do mental subtractions with answers between 10 and 20, 10 and 30, and either side of 100
10	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Revise times-tables learned and derive division facts; perform division with remainders; choose a mental strategy to solve additions and subtractions; solve word problems

Spring Term 1		
Wk	Strands	Weekly Summary
11	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Rehearse place value in 3-digit numbers, order them on a number line and find a number in between; compare number sentences; solve additions and subtractions using place value; multiply and divide by 10 (whole number answers); count in steps of 10, 50 and 100.
12	Mental addition and subtraction (MAS); Mental multiplication and division (MMD); Statistics (STA); Problem solving, reasoning and algebra (PRA)	Add pairs of 2-digit numbers using partitioning (crossing 10s, 100 or both) and then extend to add two 3-digit numbers (not crossing 1000); recognise and sort multiples of 2, 3, 4, 5, and 10; double the 4 times-table to find the 8 times-table; derive division facts for the 8 times-table; multiply and divide by 4 by doubling or halving twice
13	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA)	Identify $\frac{1}{2}$ s, $\frac{1}{3}$ s, $\frac{1}{4}$ s, $\frac{1}{6}$ s, and $\frac{1}{8}$ s; realise how many of each make a whole; find equivalent fractions; place fractions on a 0 to 1 line; find fractions of amounts
14	Geometry: properties of shapes (GPS); Geometry: position and direction (GPD); Measurement (MEA)	Recognise right angles and know they are 90° ; understand angles are measured in degrees; recognise $^\circ$ as the symbol for the measurement of degrees; name and list simple properties of 2D shapes; begin to understand and use the term perimeter to mean the length/distance around the edge (border) of a 2D shape; begin to calculate using a ruler; know a right angle is a quarter turn; know 360° is a full turn; begin to understand angles and identify size of angles in relation to 90°
15	Number and place value (NPV); Mental addition and subtraction (MAS)	Place 3-digit numbers on empty 100 number lines; begin to place 3-digit numbers on 0-1000 landmarked and empty number lines; round 3-digit numbers to the nearest ten and to the nearest hundred; use counting up as a strategy to perform mental subtraction (Frog); subtract pounds and pence from five pounds; use counting up (Frog) as a strategy to perform mental subtraction of amounts of money; subtract pounds and pence from ten pounds

Spring Term 2		
Wk	Strands	Weekly Summary
16	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Written addition and subtraction (WAS)	Understand place-value in 3-digit numbers; separate 3-digit numbers into hundreds, tens, and ones; add two 3-digit numbers using vertical written addition (expanded); add 2- and 3- digit numbers using vertical written addition (expanded)
17	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Add two 2-digit numbers mentally; add 2-digit to 3-digit numbers mentally using place value and rounding; add two 3-digit numbers using expanded written method (answers under 1000); begin to move tens and hundreds moving towards formal written addition; add two 3-digit numbers using expanded column addition; investigate patterns in numbers when adding them; choose to solve addition using a mental method or expanded column addition (written method)
18	Measurement (MEA)	Tell the time to the nearest minute on analogue and digital clocks (minutes past and minutes to); time events in minutes and seconds; find a time after a given interval (not crossing the hour); calculate time intervals; solve word problems involving time
19	Number and place value (NPV); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Order 3-digit numbers and find numbers between; solve subtractions of 3-digit - 3-digit numbers using counting up (Frog); use counting up and counting back as strategies to perform mental subtractions; choose to solve a given subtraction by counting up or counting back
20	Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Double and halve numbers up to 100 by partitioning; solve word problems involving doubling and halving; multiply numbers between 10 and 25 by 1-digit numbers using the grid method; divide multiples of 10 by 1-digit numbers using known tables facts; see the relation between multiplication and division

Summer Term 1		
Wk	Strands	Weekly Summary
21	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Written multiplication and division (WMD); Fractions, ratio and proportion (FRP)	Add 3-digit and 1-digit numbers mentally, using number facts; subtract 1-digit numbers from 3-digit numbers mentally using number facts; add and subtract multiples of 10 by counting on and back in 10s and using number facts to cross 100s; compare and order fractions with the same denominator; begin to recognise equivalences of $\frac{1}{2}$; add and subtract fractions with the same denominator
22	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Written multiplication and division (WMD)	Use function machines to multiply by 2, 3, 4, 5 and 8 and understand the inverse; use scaling to multiply heights and weights by 2, 4, 8, 5 and 10; use known facts to multiply multiples of 10 by 2, 3, 4 and 5; multiply numbers between 10 and 30 by 3, 4 and 5 using the grid method; multiply 2-digit numbers by 3, 4, 5 and 8 using the grid method
23	Mental multiplication and division (MMD); Written multiplication and division (WMD)	Divide without remainders, just beyond the 12th multiple; division using chunking, with remainders; use the grid method to multiply 2-digit numbers by 3, 4, 5 and 8; begin to estimate products
24	Statistics (STA); Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Draw and interpret bar charts and pictograms where one square/symbol represents two units; compare and measure weights in multiples of 100g; know how many grams are in a kilogram; estimate and weigh objects to the nearest 100g; draw and interpret bar charts where one square represents one hundred units
25	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Add 3-digit and 2-digit numbers using mental strategies; add two 3-digit numbers using mental strategies or by using column addition; use reasoning, trial and improvement to solve problems involving more complex addition

Summer Term 2		
Wk	Strands	Weekly Summary
26	Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Use column addition to add three 2- and 3-digit numbers together and four 2- and 3-digit numbers together; subtract 3-digit numbers using counting up; solve word problems choosing an appropriate method
27	Written addition and subtraction (WAS); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Add 3-digit numbers using column addition; solve problems involving measures; solve subtractions of 3-digit numbers using counting up on a line and work systematically to find possibilities; choose an appropriate strategy to solve addition or subtraction
28	Geometry: properties of shapes (GPS); Measurement (MEA)	Identify, name and draw horizontal, vertical, perpendicular, parallel and diagonal lines, angles and symmetry in 2D shapes; measure the perimeter of 2D shapes by counting and measuring with a ruler; tell the time on analogue and digital clocks to the minute, begin to tell the time 5, 10, 20 minutes later, recognise am and pm and 24-hour clock times
29	Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Decimals, percentages and their equivalence to fractions (DPE)	Use the grid method to multiply 2-digit numbers by 3, 4, 5, 6 and 8; estimate products; divide using chunking, with and without remainders; decide whether to use multiplication or division to solve word problems; recognise tenths and equivalent fractions; find one-tenth and several tenths of multiples of 10 and begin to find one-tenth of single-digit numbers
30	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA); Written multiplication and division (WMD); Mental multiplication and division (MMD)	Revise column addition for adding three 3-digit numbers; revise mental strategies for addition; subtract 3-digit numbers using written and mental methods; find change using counting up; check subtraction using addition; multiply numbers between 10 and 40 by 1-digit numbers using grid method; solve division problems just beyond the known tables facts



Abacus Year 4 Maths

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Finding pairs with a total of 100; adding to the next multiple of 100 and subtracting to the previous multiple of 100; subtract by counting up to find a difference; adding several numbers
2	Number and place value (NPV); Mental addition and subtraction (MAS)	Read, write 4-digit numbers and know what each digit represents; compare 4-digit numbers using $<$ and $>$ and place on a number line; add 2-digit numbers mentally; subtract 2-digit and 3-digit numbers
3	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Learn \times and \div facts for the 6 and 9 times-table and identify patterns; multiply multiples of 10 by single-digit numbers; multiply 2-digit numbers by single-digit numbers (the grid method); find fractions of amounts
4	Measurement (MEA); Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to fractions (DPE)	Tell and write the time to the minute on analogue and digital clocks; calculate time intervals; measure in metres, centimetres and millimetres; convert lengths between units; record using decimal notation
5	Written addition and subtraction (WAS)	Add two 3-digit numbers using column addition; subtract a 3-digit number from a 3-digit number using an expanded column method (decomposing only in one column)

Autumn Term 2		
Wk	Strands	Weekly Summary
6	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Double 3-digit numbers and halve even 3-digit numbers; revise unit fractions; identify equivalent fractions; reduce a fraction to its simplest form; count in fractions (each fraction in its simplest form)
7	Decimals, percentages and their equivalence to fractions (DPE); Number and place value (NPV); Written addition and subtraction (WAS)	Look at place value in decimals and the relationship between tenths and decimals; add two 4-digit numbers; practise written and mental addition methods; use vertical addition to investigate patterns
8	Decimals, percentages and their equivalence to fractions (DPE); Measurement (MEA); Statistics (STA); Problem solving, reasoning and algebra (PRA)	Convert multiples of 100 g into kilograms; convert multiples of 100 ml into litres; read scales to the nearest 100 ml; estimate capacities; draw bar charts, record and interpret information
9	Number and place value (NPV); Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Round 4-digit numbers to the nearest: 10, 100 and 1000; subtract 3-digit numbers using the expanded written version and the counting up mental strategy and decide which to use
10	Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Use the grid method to multiply 3-digit by single-digit numbers and introduce the vertical algorithm; begin to estimate products; divide numbers (up to 2 digits) by single-digit numbers with no remainder, then with a remainder

Spring Term 1		
Wk	Strands	Weekly Summary
11	Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Place 4-digit numbers on landmarked lines; 0–10 000 and 1000–2000; round 4-digit numbers to the nearest 10, 100 and 1000; mentally add and subtract to/from 4-digit and 3-digit numbers using place-value; count on and back in multiples of 10, 100 and 1000; count on in multiples of 25 and 50; add and subtract multiples of 10 and 100 to/from 4-digit numbers
12	Written addition and subtraction (WAS); Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Use expanded written subtraction and compact written subtraction to subtract pairs of 3-digit numbers (one 'exchange'); use expanded column subtraction and compact column subtraction to subtract pairs of 3-digit and 2-digit numbers from 3-digit numbers (one 'carry'); learn the 7× table and 'tricky' facts; use the vertical algorithm to multiply 3-digit numbers by 1-digit numbers; solve simple money problems with decimals to two decimal places
13	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA)	Use mental multiplication and division strategies; find non-unit fractions of 2-digit and 3-digit numbers; find equivalent fractions and use them to simplify fractions (halves, thirds, quarters)
14	Geometry: properties of shapes (GPS); Problem solving, reasoning and algebra (PRA)	Recognise and compare acute, right and obtuse angles; draw lines of a given length; identify perpendicular and parallel lines; recognise and draw line symmetry in shapes; sort 2D shapes according to their properties; draw shapes with given properties and explain reasoning; draw the other half of symmetrical shapes
15	Mental multiplication and division (MMD); Written multiplication and division (WMD); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA)	Understand how to divide 2-digit and 3-digit numbers by 1-digit numbers using place value and mental strategies; divide numbers by 1-digit numbers to give answers between 10 and 25, with remainders; identify factor pairs and use these to solve multiplications and divisions with larger numbers; use Frog to find complements to multiples of 1000; use Frog to find change from £10, £20 and £50

Spring Term 2		
Wk	Strands	Weekly Summary
16	Decimals, percentages and their equivalence to fractions (DPE); Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Written addition and subtraction (WAS)	Recognise, use, compare and order decimal numbers; understand place value in decimal numbers; recognise that decimals are tenths; round decimal numbers to the nearest whole number; divide 2-digit numbers by 10 to get decimal numbers; multiply decimal numbers by 10 to get 2-digit numbers; divide 3-digit multiples of ten by 100 to get decimal numbers; multiply decimal numbers by 100 to get 3-digit multiples of ten; add four digit numbers using written method with answers greater than 10 000
17	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Measurement (MEA); Problem solving, reasoning and algebra (PRA)	Add amounts of money using written methods and mentally using place value and number facts; choose to add using the appropriate strategy: mental or written; subtract, choosing appropriate mental strategies: counting up or taking away (using counting back, place value or number facts); solve subtractions using a suitable written method (column subtraction)
18	Measurement (MEA); Problem solving, reasoning and algebra (PRA)	Tell the time on a 24 hour clock, using am and pm correctly; convert pm times to 24 hour clock and vice versa; use 24 hour clock in calculating intervals of time; measure and calculate perimeters of rectilinear shapes where each side is labelled in cm and m; find missing lengths in rectilinear composite shapes; find the perimeters of rectilinear shapes with some lengths not marked; convert from one unit of length to another; solve word problems involving lengths including those involving perimeters
19	Number and place value (NPV); Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Understand place value in 4-digit numbers; partition 4-digit numbers; solve subtraction of 4-digit numbers using column subtraction (decomposition); choose an appropriate method to solve subtractions, either mental or written, and either column or counting up (Frog)
20	Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Use the vertical algorithm to multiply 3-digit numbers by 1-digit numbers; explore patterns; use mental strategies and tables facts to divide 2-digit and 3-digit numbers by 1-digit numbers to give answers between 10 and 35, without remainders; solve word problems

Summer Term 1		
Wk	Strands	Weekly Summary
21	Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Read, write and compare 4-digit numbers and place on a line; find 1000 more or less than any given number; read, write and compare 5-digit numbers; recognise what each digit represents in a 5-digit number; read, use and compare negative numbers in the context of temperature
22	Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to fractions (DPE)	Multiply and divide numbers by 10 and 100 including decimals (tenths and hundredths); read and write decimals (to 1 and 2 places), understanding that these represent parts (tenths and hundredths) of numbers; mark 1- and 2- place decimals on a line; count in tenths (0.1s) and hundredths (00.1s); multiply numbers with up to 2 decimal places by 10 and 100, and divide numbers by 10 and 100; say the number one tenth and one hundredth more or less than a given number; round decimal numbers to the nearest whole number
23	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Number and place value (NPV); Written multiplication and division (WMD); Measurement (MEA)	Learn 11 and 12x tables; develop and use effective mental multiplication strategies; use a vertical written method to multiply 3-digit numbers by 1-digit numbers; use rounding to estimate answers; use a written method to multiply 3-digit numbers, including amounts of money by 1-digit numbers; multiply 2-digit and 3-digit numbers by 1-digit numbers; understand how division 'undoes' multiplication and vice versa; divide above the tables facts using multiples of 10
24	Number and place value (NPV); Measurement (MEA); Geometry: properties of shapes (GPS)	Recognise and write Roman numerals to 100; begin to know the history of our number system including 0; calculate area and perimeter of rectilinear shapes using multiplication and addition, or counting; recognise, name and classify 2D shapes identifying regular and irregular polygons; sort 2D shapes according to properties including types of quadrilaterals and triangles; revise 3D shapes, consider 2D-shaped sides on 3D shapes, and sort shapes
25	Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Understand, read and write 2-place decimals; compare 2-place decimals in the context of lengths; add and subtract 0.1 and 0.01 and say a number one-tenth (0.1) or one-hundredth (0.01) more or less than a given number; revise equivalent fractions; write fractions with different denominators with a total of 1; recognise decimal and fraction equivalents

Summer Term 2		
Wk	Strands	Weekly Summary
26	Mental addition and subtraction (MAS); Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Add two 2-digit numbers or a 2-digit number to a 3- or 4-digit number mentally; subtract 2-, 3- and 4-digit numbers using counting up; derive factors of 2-digit numbers and use factors and doubling to solve multiplication mentally; solve integer scaling problems using mental strategies and spot a relationship between products; solve correspondence problems, using a systematic approach and calculate using mental multiplication strategies
27	Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Solve written addition of two 4-digit numbers; add amounts of money (pounds and pence) using column addition; solve 4-digit minus 4-digit and 4-digit minus 3-digit subtractions using written column method (decomposition) and check subtraction with addition; solve word problems choosing an appropriate method
28	Geometry: position and direction (GPD); Statistics (STA)	Use coordinates to draw polygons; find the coordinates of shapes after translation; draw and interpret bar charts and pictograms; draw line graphs and understand that intermediate points have meaning
29	Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Decimals, percentages and their equivalence to fractions (DPE)	Use the vertical algorithm (ladder) to multiply 3-digit numbers by 1-digit numbers; find non-unit fraction of amounts, using 'chunking'; add fractions with like denominators, including totals greater than 1; divide by 10 and 100 (to give answers with 1 and 2 decimal places)
30	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Written multiplication and division (WMD); Fractions, ratio and proportion (FRP)	Multiply 2-digit numbers by 11 and 12; look for patterns and write rules; multiply 2-digit numbers by numbers between 10 and 20 using the grid method; begin to use the grid method to multiply pairs of 2-digit numbers; use mental strategies and tables facts to divide 2-digit and 3-digit numbers by 1-digit numbers to give answers between 20 and 50, with and without remainders; find non-unit fractions of amounts



Abacus Year 5

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Number and place value (NPV); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Read, write, compare and order 5-digit numbers, understanding the place value and using < and > signs; add and subtract multiples of 10, 100 and 1000 to and from 5-digit numbers; use written addition to add two 4-digit numbers; sustain a line of enquiry; make and test a hypothesis
2	Mental addition and subtraction (MAS); Number and place value (NPV)	Add and subtract 2-digit numbers mentally; choose a strategy for solving mental additions or subtractions; solve word problems
3	Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD)	Understand place value in decimal numbers; multiply and divide numbers with up to two decimal places by 10 and 100; multiply and divide by 0 and 100; add and subtract 0.1 and 0.01; multiply and divide by 4 by doubling or halving twice; use mental multiplication strategies to multiply by 20, 25 and 9
4	Measurement (MEA)	Revise converting 12-hour clock times to 24-hour clock times; find a time a given number of minutes or hours and minutes later; calculate time intervals using 24-hour clock format; measure lengths in mm and convert to cm; find perimeters in cm and convert cm to m
5	Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Solve subtraction using a written method for 3-digit – 3-digit numbers and for 4-digit numbers; use counting up (Frog) as a strategy to perform mental subtraction; find change from a multiple of ten pounds using counting up
Autumn Term 2		
Wk	Strands	Weekly Summary
6	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Recognise which numbers are divisible by 2, 3, 4, 5, 6, 9 and 25 and identify multiples; find factors; recording results systematically and finding all factors of a given number; compare and place fractions on a line; find equivalent fractions and reduce them to their simplest form
7	Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Use mental strategies to multiply and divide multiples of 10 and 100; use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers and estimate answers, divide 3-digit numbers by 1-digit numbers using a written method and express remainders as a fraction and solve division word problems
8	Geometry: properties of shapes (GPS); Problem solving, reasoning and algebra (PRA)	Use a protractor to measure and draw angles in degrees; recognise, use terms and classify angles as obtuse, acute and reflex; recognise that angles on a line total 180° and angles round a point total 360°; identify and name parts of a circle including diameter, radius and circumference; draw circles to a given radius using a pair of compasses; relate angles to turns, and recognise that a 360° angle is a complete turn; use angle facts to solve problems related to turn
9	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Place numbers to 100 000 and decimals up to two places on a line, round numbers to the nearest 10, 100 and 1000 and decimals up to two places to the nearest whole number; compare and order numbers with up to two decimal places; reduce fractions to their simplest form; know and recognise equivalent fractions and decimals to half, tenths and fifths
10	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Number and place value (NPV); Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Revise mental and written addition and subtraction strategies, choose to use a mental strategy or written method to solve addition and subtraction, choose to solve word problems involving multiplication and division questions including 2- and 3-digit by 1-digit and 2-digit by 2-digit using a mental or a written method, use mathematical reasoning to work out a function, identify the operation being used on numbers, understand that addition and subtraction are inverse operations multiplication and division, use function machines

Spring Term 1		
Wk	Strands	Weekly Summary
11	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA)	Read, write and order numbers with up to 6 digits and understand the place value of each digit; place 6-digit numbers on a number line and find numbers between; solve place-value additions and subtractions with 6-digit numbers; understand place value in decimal numbers as tenths and hundredths; multiply and divide by 10/100/1000 using a place-value grid; understand place value in decimal numbers to 2-decimal places; place decimal numbers on a line; round two-place decimal numbers to nearest tenth and whole number; say the number a tenth or a hundredth more
12	Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Written addition and subtraction (WAS)	Rehearse mental addition strategies for decimals and whole numbers; use counting on as a strategy to perform mental addition of 2-place decimals to the next whole number; solve missing number sentences; use mental strategies to solve multi-step word problems; use counting up as a strategy to perform written subtraction (Frog)
13	Mental multiplication and division (MMD); Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10; identify prime numbers; revise finding factors of numbers; find squares and square roots of square numbers; finding patterns and making and testing rules; use mental multiplication and division strategies; relate mental division strategies to multiples of ten of the divisor
14	Problem solving, reasoning and algebra (PRA); Geometry: properties of shapes (GPS); Measurement (MEA); Statistics (STA)	Know properties of equilateral, isosceles, scalene and right-angled triangles; find that angles in a triangle have a total of 180°; sort triangles according to their properties; use scales to weigh amounts to the nearest half interval; convert from grams to kilograms and vice versa, from millilitres to litres and vice versa, and from metres to kilometres and vice versa; read scales to the nearest half division; understand that we measure distance in kilometres and miles; use ready reckoning to give approximate values of miles in kilometres and vice versa; draw line conversion graphs
15	Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Use a written column method to add amounts of money in pounds and pence; add 2-place decimals using written column addition; subtract decimal numbers using counting up (Frog)

Spring Term 2		
Wk	Strands	Weekly Summary
16	Written multiplication and division (WMD)	Use a written method (grid) to multiply pairs of 2-digit numbers; use short division to divide 3-digit numbers by 1-digit numbers, including those which leave a remainder
17	Written multiplication and division (WMD); Fractions, ratio and proportion (FRP)	Find unit fractions and non-unit fractions of 3-digit numbers; use short multiplication to multiply 3-digit numbers by 1-digit numbers; begin to use short multiplication to multiply 4-digit numbers by 1-digit numbers
18	Geometry: properties of shapes (GPS); Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Understand what a polygon is; draw polygons using dotted square and isometric paper; revise terms obtuse, acute and reflex angles, perpendicular and parallel sides; recognise quadrilaterals as polygons and identify their properties; classify quadrilaterals; draw regular polygons and explore their properties; revise metric units of weight, capacity and length; understand that we can measure in imperial units and relate these to their instances in daily life
19	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA)	Place mixed numbers on lines; count up in fractions using equivalence; convert improper fractions to mixed numbers and vice versa; write improper fractions as mixed numbers and vice versa; multiply proper fractions by whole numbers
20	Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Solve subtraction of 4-digit numbers using written column subtraction (decomposition); add several numbers using written column addition; use column to solve problems

Summer Term 1		
Wk	Strands	Weekly Summary
21	Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA)	Add mentally 2-place decimal numbers in the context of money using rounding; add several small amounts of money using mental methods; mentally subtract amounts of money including giving change; calculate the difference between two amounts using counting up; solve word problems, including 2-step problems, choosing an appropriate method
22	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA); Written multiplication and division (WMD)	Multiply fractions less than 1 by whole numbers, convert improper fractions to whole numbers; use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers; use long multiplication to multiply 2-digit and 3-digit numbers by teens numbers
23	Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Read, write and compare decimals to three decimal places, understanding that the third decimal place represents thousandths; multiply and divide numbers by 10, 100 and 1000 using 3-place decimal numbers in the calculations; place 2-place decimals on a number line and round them to the nearest tenth and whole number; read, write, order and compare 3-place decimal numbers; understand and use negative numbers in the context of temperature
24	Geometry: position and direction (GPD); Problem solving, reasoning and algebra (PRA); Geometry: properties of shapes (GPS)	Read and mark co-ordinates in the first two quadrants; draw simple polygons using co-ordinates; translate simple polygons by adding to and subtracting from the co-ordinates; reflect simple shapes in the y axis or in a line, noting the effect on the co-ordinates; translate simple shapes and note what happens to the co-ordinates; draw regular and irregular 2D shapes using given dimensions and angles; use the properties of 2D shapes, including rectangles, to derive related facts; identify 3D shapes from 2D representations; create 3D shapes using 2D nets and draw 3D shapes
25	Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Add 5-digit numbers using written column addition; subtract 5-digit numbers using written method (decomposition); check answers to subtractions using written column addition; solve subtractions of 4- and 5-digit numbers using written column subtraction or number line counting up

Summer Term 2		
Wk	Strands	Weekly Summary
26	Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Identify factors and multiples, find factor pairs; revise equivalent fractions; compare and order fractions with related denominators; add fractions with same or related denominators, then convert answer into a mixed number; subtract fractions with same and related denominators, revise multiplying fractions by whole numbers
27	Written multiplication and division (WMD)	Use short division to divide 3-digit numbers by 1-digit numbers and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers
28	Problem solving, reasoning and algebra (PRA); Measurement (MEA)	Find the area and perimeter of squares and rectangles by calculation and pursue a line of enquiry; estimate and find the area of irregular shapes; calculate the perimeter and area of composite shapes; use the relations of area and perimeter to find unknown lengths; begin to understand the concept of volume; find the volume of a cube or cuboid by counting cubes; understand volume as measurement in three dimensions; relate volume to capacity; recognise and estimate volumes
29	Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP); Number and place value (NPV)	Understand what percentages are, relating them to hundredths; know key equivalences between percentages and fractions, finding percentages of amounts of money; find equivalent fractions, decimals and percentages; solve problems involving fraction and percentage equivalents; write dates using Roman numerals
30	Statistics (STA); Measurement (MEA); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Mental multiplication and division (MMD)	Find cubes of numbers to 10; draw and interpret line graphs showing change in temperature over time; begin to understand rate; use timetables using the 24-hour clock and use counting up to find time intervals of several hours and minutes; solve problems involving scaling by simple fractions; use factors to multiply; solve scaling problems involving measure



Abacus Year 6 Maths

Autumn Term 1		
Wk	Strands	Weekly Summary
1	Number and place value (NPV); Mental multiplication and division (MMD); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Read, write and compare 6-digit numbers and know what each digit represents; read, write and compare 1-, 2- and 3-place decimal numbers; multiply and divide by 10, 100 and 1000; round decimals to nearest tenth and whole number and place on a number line; convert decimals (up to 3 places) to fractions and vice-versa.
2	Mental addition and subtraction (MAS); Number and place value (NPV); Written addition and subtraction (WAS); Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA)	Use mental addition strategies to solve additions including decimal numbers; use column addition to add 5-digit numbers, decimal numbers and amounts of money; solve problems involving number up to 3 decimal places, choose an appropriate method to solve decimal addition.
3	Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Express missing number problems algebraically and find pairs of numbers that satisfy equations involving two unknowns; find missing lengths and angles; understand how brackets can be used in calculation problems; use knowledge of the order of operations to carry out calculations involving the four operations, solve addition and subtraction multi-step problems using knowledge of the order of operations.
4	Measurement (MEA); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Convert between grams and kilograms, millilitres and litres, millimetres and centimetres, centimetres and metres, metres and kilometres, and miles and kilometres; revise reading the 24-hour clock and convert 12-hour times to 24-hour; read and write Roman numerals; find time intervals using the 24-hour clock.
5	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Use mental addition, column subtraction and Counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate.
6	Mental multiplication and division (MMD); Written multiplication and division (WMD); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Use mental multiplication strategies to multiply by numbers such as 4, 8, 5, 25, 19, 29 and 99; revise using short multiplication to multiply 4-digit numbers by 1-digit numbers and use this to multiply amounts of money; solve word problems involving multiplication including two-step problems and finding change; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers.
Autumn Term 2		
Wk	Strands	Weekly Summary
7	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Understand negative numbers; calculate small differences between negative numbers and negative and positive numbers; add and subtract negative numbers; compare fractions with unlike, but related, denominators; correctly use the terms fraction, denominator and numerator; understand what improper fractions and mixed numbers are and add fractions with the same denominator, writing the answer as a mixed number
8	Measurement (MEA); Geometry: properties of shapes (GPS)	Calculate the perimeter, area and volume of shapes, and know their units of measurement; understand that shapes can have the same perimeters but different areas and vice versa; calculate the area of a triangle using the formula $A = \frac{1}{2} b \times h$; find the area of parallelograms using the formula $A = b \times h$; name and describe properties of 3D shapes; systematically find and compare nets for different 3D shapes.
9	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Use mental strategies to divide by 2, 4, 8, 5, 20 and 25; find non-unit fractions of amounts; use short division to divide 3- and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction, simplifying where possible.
10	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA); Decimals, percentages and their equivalence to fractions (DPE)	Add and subtract unit fractions with different denominators including mixed numbers; use mental strategies to find simple percentages of amounts, including money
11	Fractions, ratio and proportion (FRP)	Multiply fractions less than 1 by whole numbers, converting improper fractions to whole numbers; use commutativity to efficiently multiply fractions by whole numbers; divide unit and non-unit fractions by whole numbers; solve word problems involving fractions.

Spring Term 1

Wk	Strands	Weekly Summary
12	Number and place value (NPV); Written addition and subtraction (WAS)	Read and write numbers with up to 7-digits, understanding what each digit represents; work systematically to find out how many numbers round to 5000000; solve subtraction of 5- and 6-digit numbers using written column method (decomposition).
13	Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Multiply and divide by 10, 100 and 1000; compare and order numbers with up to three decimal places; know common fraction / decimal equivalents; multiply pairs of unit fractions and multiply unit fractions by non-unit fractions
14	Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Use partitioning to mentally multiply 2-digit numbers with one decimal place by whole 1-digit numbers; multiply numbers with two decimal places; use short multiplication to multiply amounts of money; use estimation to check answers to calculations; use long multiplication to multiply 3-digit and 4-digit numbers by numbers between 10 and 30.
15	Geometry: properties of shapes (GPS); Problem solving, reasoning and algebra (PRA)	Name, classify and identify properties of quadrilaterals; explore how diagonal lines can bisect quadrilaterals; understand what an angle is and that it is measured in degrees; know what the angles of triangles, quadrilaterals, pentagons, hexagons and octagons add to and use these facts and mathematical reasoning to calculate missing angles; recognise and identify the properties of circles and name their parts; draw circles using pairs of compasses; draw polygons using a ruler and a protractor
16	Mental addition and subtraction (MAS); Number and place value (NPV); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Add and subtract numbers using mental strategies; solve addition of 4- to 7-digit numbers using written column addition; identify patterns in the number of steps required to generate palindromic numbers; solve subtraction of 5-, 6- and 7-digit numbers using written column method (decomposition); solve additions and subtractions choosing mental strategies or written procedures as appropriate; read, understand and solve word problems
17	Written multiplication and division (WMD); Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Identify common factors and common multiples; understand that a prime number has exactly two factors and find prime numbers less than 100; understand what a composite (non-prime) number is; use long division to divide 3- and 4-digit numbers by 2-digit numbers, giving remainders as a fraction, simplifying where possible

Spring Term 2

Wk	Strands	Weekly Summary
18	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Solve addition and subtraction multi-step problems in shopping contexts, and add and subtract money using column addition and counting up; add and subtract decimal numbers choosing an appropriate strategy, and add decimal numbers with different numbers of places using column addition; use mathematical reasoning to investigate and solve problems, and solve subtractions of decimal numbers with different numbers of places (2-places) using counting up
19	Statistics (STA); Decimals, percentages and their equivalence to fractions (DPE)	Calculate and understand the mean average; construct and interpret distance/time line graphs where intermediate points have meaning, including conversion line graphs; understand pie charts are a way of representing data using percentages, interpret and construct pie charts
20	Geometry: position and direction (GPD); Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Geometry: properties of shapes (GPS)	Read and plot coordinates in all four quadrants, draw and translate simple polygons using coordinates and find missing coordinates for a vertex on a polygon; draw and reflect simple polygons in both the x-axis and y-axis using coordinates; find unknown angles around a point, on a line, in a triangle or vertically opposite and in polygons where diagonals intersect
21	Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Multiply 4-digit numbers including those with two decimal places by 1-digit numbers; use long multiplication to multiply 4-digit numbers by numbers between 10 and 30, including those with two decimal places; revise using short division to divide 4-digit by 1-digit and 2-digit numbers including those which leave a remainder, and divide the remainder by the divisor to give a fraction, simplifying where possible, and make approximations; use long division to divide 4-digit by 2-digit numbers, and use a systematic approach to solve problems
22	Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Generalise a relationship between pairs of numbers, express simple formulae in words, then using letters; describe and continue sequences, generalise to predict the tenth term, begin to generalise a term in a sequence using n to stand for the number of the term in a sequence; describe ratio and use ratio to solve problems; find fractions and simplify ratios

