

Stradbroke CEVC Primary School Calculation Policy

Aims

- To give children the opportunity to develop a full understanding of the number system.
- To enable children to select and apply the most appropriate and effective methods to solve calculation problems.
- To encourage accuracy for answers through estimation and knowledge of number.
- To achieve key objectives relating to calculation throughout the curriculum.
- To develop a positive attitude towards Maths and develop the confidence to tackle calculation problems, applying knowledge to other areas of the curriculum.

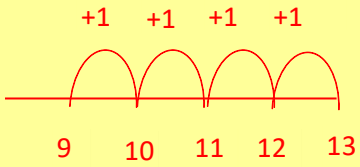
Key Principles

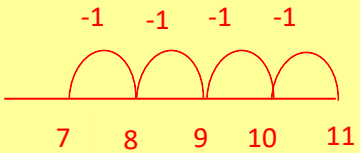
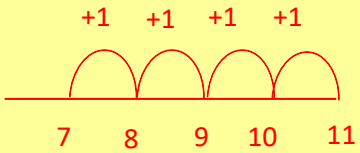
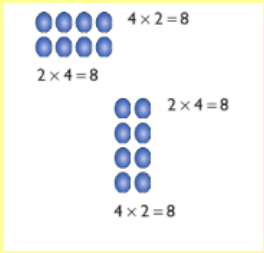
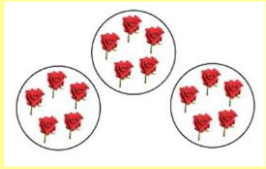
- Methods suggested are taught as appropriate ability strategies, ensuring understanding is secure before progressing.
- Concrete and pictorial representations, including practical resources, are used with consideration of children's preferred learning styles.
- Emphasis is placed on a working knowledge and understanding of place value across all year groups.
- Mental calculation strategies are taught to all year groups to encourage rapid recall of number facts and to support written methods.
- Children's preferred methods are encouraged, shared and valued.
- Calculation is taught in context and applied in all areas of school life and subject areas.

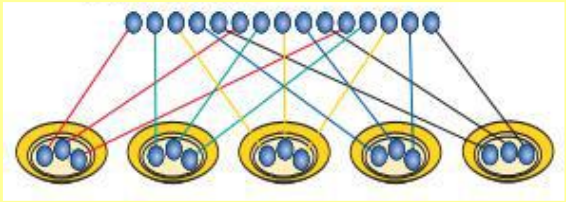
The methods outlined are suggested ability-appropriate strategies; ensuring that children develop a secure understanding before they progress to other methods and allowing more able children to progress even further.

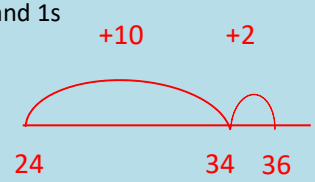
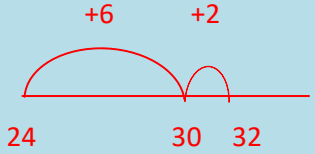
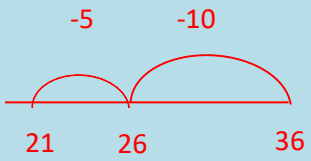
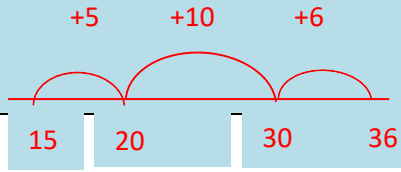
<table>
<tr><td colspan="5">Key Stage 1</td></tr>
<tr><td></td><td>Overview of KS1</td><td colspan="3">Children in Years 1 and 2 will be given a really solid foundation in the basic building blocks of mental and written arithmetic. Through being taught place value, they will develop an understanding of how numbers work, so that they are confident in 2-digit numbers and beginning to read and say numbers above 100. A focus on number bonds, first via practical hands-on experiences and subsequently using memorisation techniques, enables a good grounding in these crucial facts, and ensures that all children leave Y2 knowing the number bonds to 20. Their knowledge of number facts enables them to add several single-digit numbers, and to add/subtract a single digit number to/from a 2-digit number. Another important conceptual tool is understanding place value and their ability to add/subtract 1 or 10, and to understand which digit changes and why. This understanding is extended to enable children to add and subtract multiples of ten to and from any 2-digit number. The most important application of this knowledge is their ability to add or subtract any pair of 2-digit numbers by counting on or back in tens and ones. Children may extend this to adding by partitioning numbers into tens and ones. Children will be taught to count in 2s, 3s, 5s and 10s, and will have related this skill to repeated addition. They will have met and begun to learn the associated 2x, 3x, 5x and 10x tables facts. Engaging in a practical way with the concept of repeated addition and the use of arrays enables children to develop a preliminary understanding of multiplication, and asking them to consider sharing and grouping will introduce them to the idea of division. They will also be taught to double and halve numbers, and will thus experience scaling up or down as a further aspect of multiplication and division. Fractions will be introduced as numbers and as operators, specifically in relation to halves, quarters and thirds.</td></tr>
<tr><td></td><td></td><td>Mental Calculation/Method</td><td>Written Calculation/Method</td><td>Key Skills</td></tr>
<tr><td>Year 1</td><td>Addition</td><td>Using concrete and pictorial resources to add on and combine, moving to mental strategies.

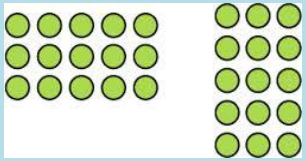
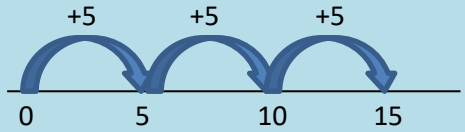
Number bonds (‘story of’ 5, 6, 7, 8, 9 and 10)
Count on in ones from a given 2-digit number
Add two single-digit numbers
Add three single-digit numbers spotting doubles or pairs to 10
Count on in tens from any given 2-digit number
Add 10 to any given 2-digit number
Use number facts to add single-digit numbers to two-digit numbers, e.g. use 4 + 3 to work out 24 + 3, 34 + 3…
Add by putting the larger number first</td><td>Use number lines to add and count on, showing jumps.

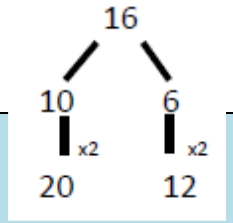
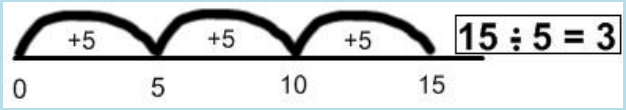
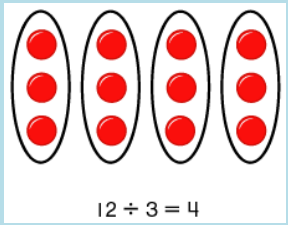
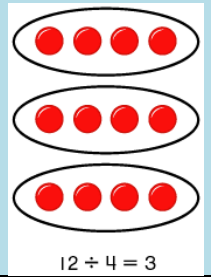
9 + 4 = 13

</td><td>Pairs with a total of 20
Counting in ones
Counting in tens
Count on 1 from any given 2-digit number
Solve simple missing number problems 6 + ☐ = 9
Read and write the addition (+) and equals (=) signs and use them in number sentences.</td></tr>
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	Subtraction	Using concrete and pictorial resources to subtract from a total, moving to mental strategies. Number bonds ('story of' 5, 6, 7, 8, 9 and 10) Count back in ones from a given 2-digit number Subtract one single-digit number from another Count back in tens from any given 2-digit number Subtract 10 from any given 2-digit number Use number facts to subtract single-digit numbers from two-digit numbers, e.g. use 7 – 2 to work out 27 – 2, 37 – 2…	Use number lines to count back on to subtract. 11 – 4 = 7  Use number lines to count on to find the difference. 11 – 4 = 7  	Pairs with a total of 20 Counting back in ones from 20 to 0 Counting back in tens from 100 to 0 Count back 1 from any given 2-digit number Solve simple missing number problems 12 - ☐= 3 Read and write the subtraction (-) and equals (=) signs and use them in number sentences.
	Multiplication	Using concrete and pictorial resources to count groups/sets, moving to mental strategies. Begin to count in 2s, 5s and 10s Begin to say what three 5s are by counting in 5s or what four 2s are by counting in 2s, etc. Double numbers to 10	Use arrays and pictorial representations to count in groups/sets.  Make links to repeated addition and multiplication. 5 + 5 + 5 = 15 OR 5 x 3 = 15 	Begin to count in 2s, 5s and 10s Double numbers to 10 using fingers Solve one-step multiplication problems, using resources and arrays for support

	Division	Using concrete and pictorial resources to group and share amounts, moving to mental strategies. Begin to count in 2s, 5s and 10s Find half of even numbers to 12 and know it is hard to halve odd numbers Find half of even numbers by sharing Begin to use visual and concrete arrays or 'sets of' to find how many sets of a small number make a larger number.	Use sharing to separate amounts, link to division 15 ÷ 5 = 3 15 shared between 5 equals 3  Also develop grouping as a different concept – how many 2s are in 10? Encourage counting up in twos as groups of objects. Begin to use arrays, linked to inverse of multiplication.	Begin to count in 2s, 5s and 10s Use grouping, sharing and arrays to solve simple division problems Find simple fractions by sharing and grouping Find half of even numbers to 10
		Mental Calculation/Method	**Written Calculation/Method**	**Key Skills**

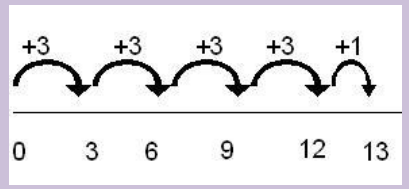
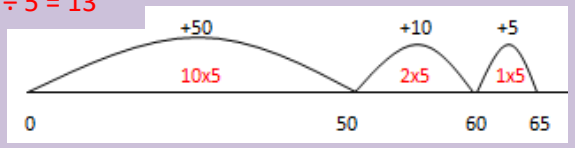
Year 2	**Addition**	Recall and use number bonds to 20 Learn and use related facts to 100 Count on and back in 2s, 3s, 5s and 10s from any given 2-digit number Add two or three single-digit numbers Add a single-digit number to any 2-digit number using number facts, including bridging multiples of 10. (E.g. 45 + 4, 38 + 7) Add 10 and small multiples of 10 to any given 2-digit number	Use number lines to add and count on, including partitioning using 10s and 1s 24 + 12 = 36  Use number lines to add and count on, including bridging through multiples of 10 24 + 8 = 32  Begin to use partitioning method to reinforce place value and number facts: 58 + 43 = 101 50 + 40 = 90 8 + 3 = 11	Know number bonds to 20 Use number facts to 100 Add two single digit numbers Add a single-digit number to a 2-digit number by counting on in ones Add 10 and small multiples of 10 to a 2-digit number by counting on in tens Add two 2-digit numbers Understand that addition can be commutative Solve missing number problems □ + 17 = 25 Recognise the inverse operation for addition and use to check answers
	Subtraction	Recall and use number bonds to 20 Learn and use related facts to 100 Count back in ones and tens from any given 2-digit number Subtract a single-digit number from any 2-digit number using number facts, including bridging multiples of 10, e.g. 56 – 3, 53 – 5. Subtract 10 and small multiples of 10 from any given 2-digit number Subtract pairs of 2-digit numbers by counting back in tens and ones or by counting up.	Use number lines to count back on to subtract 36 – 15 = 21  Use number lines to count on and find the difference 36 – 15 = 21  	Know number bonds to 20 Use number facts to 100 Subtract a single-digit number from a 2-digit number by counting back in ones Subtract 10 and small multiples of 10 from a 2-digit number by counting back in tens Solve missing word problems □ - 7 = 19 Recognise the inverse operation for subtraction and use to check answers

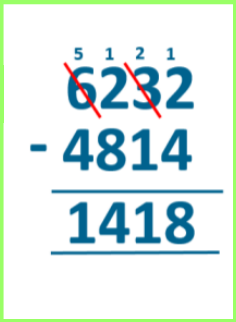
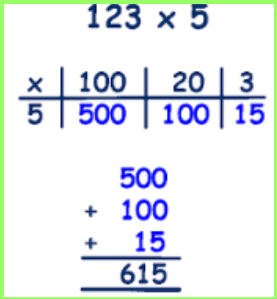
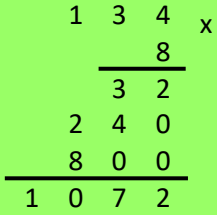
			Begin to use expanded column subtraction using partitioning 74 – 23 = 51 70 4 - 20 3 50 + 1 = 51	
	Multiplication	Count in 2s, 5s and 10s Begin to count in 3s. Begin to understand that multiplication is repeated addition and to use arrays (E.g. 3 x 4 is three rows of 4 dots) Begin to learn the 2x, 3x, 5x and 10x tables, seeing these as 'lots of', e.g. 5 lots of 2, 6 lots of 2, 7 lots of 2, etc. Double numbers up to 20 Begin to double multiples of 5 to 100 Begin to double two-digit numbers less than 50 with 1s digits of 1, 2, 3, 4 or 5	Use arrays as visual representation of multiplication and develop understanding of commutativity 5 x 3 = 15 3 x 5 = 15  Continue to make links between repeated addition and multiplication 5 x 3 = 15  Use partitioning to double	Count in 2s, 5s and 10s Begin to use and understand simple arrays, e.g. 2 x 4 is two lots of four buns. Double numbers up to 20 Begin to understand that multiplication is commutative Read and write the multiplication (x) and equals (=) signs and use them in number sentences

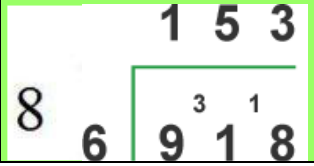
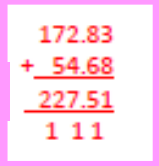
			 20 + 12 = 72 .	
	Division	Count in 2s, 5s and 10s Begin to count in 3s Using fingers, say where a given number is in the 2s, 5s or 10s count (E.g. 8 is the fourth number when I count in twos.) Relate division to grouping (E.g. how many groups of five in fifteen?) Halve numbers to 20 Begin to halve numbers to 40 and multiples of 10 to 100	Continue to develop sharing and grouping (as in Y1), using concrete representations and apparatus. Develop grouping on a number line, using counting skills  Develop use of arrays, linking to inverse of multiplication  	Recall and use number facts for 2, 5 and 10x tables Understand that division is not commutative Use mental and written methods to solve division problems Use ÷ and = signs to write accurate number sentences Find ½, $^1/_3$, ¼ and ¾ of a quantity of objects and of amounts (whole number answers)
Key Stage 2				
	Overview of Lower KS2	In Lower KS2, children build upon the concrete and conceptual understandings they have gained to develop a real mathematical understanding of the four operations, in particular developing arithmetical competence in relation to larger numbers. In addition and subtraction, they are taught to use place value and number facts to add and subtract numbers mentally and will develop a range of strategies to enable them to discard the 'counting in ones' or fingers-based methods of KS1. In particular, they will learn to add and subtract multiples and near multiples of 10, 100 and 1000, and will become fluent in complementary addition as an accurate means of achieving fast and accurate answers to 3-digit subtractions. Standard written methods for adding larger numbers are taught, learned and consolidated, including column addition and subtraction. This key stage is also the period during which all the multiplication and division facts are thoroughly memorised, including all facts up to the 12 x 12 table. Efficient written methods for multiplying or dividing a 2-digit or 3-digit number by as single-digit number are taught, as are mental strategies for multiplication or division with large but friendly numbers, e.g. when dividing by 5 or multiplying by 20. Children		

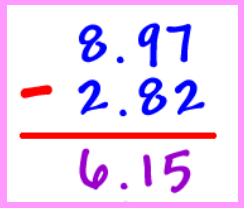
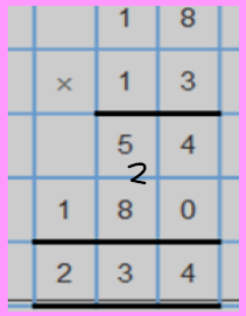
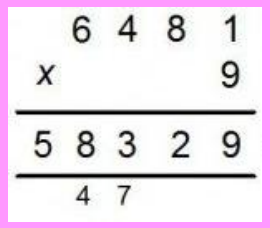
		will develop their understanding of fractions, learning to reduce a fraction to its simplest form as well as finding non-unit fractions of amounts and quantities. The concept of a decimal number is introduced and children consolidate a firm understanding of one-place decimals, multiplying and dividing whole numbers by 10 and 100.		
		Mental Calculation/Method	**Written Calculation/Method**	**Key Skills**
Year 3	**Addition**	Know and use number bonds to 100 Add any two 2-digit numbers by counting on in 10s and 1s or by using partitioning Add multiples and near multiples of 10 and 100 Perform place value additions without a struggle. (E.g. 300 + 8 + 50 = 358) Use place value and number facts to add a 1-digit or 2-digit number to a 3-digit number Add pairs of 'friendly' 3-digit numbers, e.g. 320 + 450 Begin to add amounts of money using partitioning.	Use expanded column addition, starting at the units, progressing to 3-digit numbers 358 + 473 = 831 358 + 473 11 120 700 831 Extend to compact column addition, ensuring that children can make the links between this and the expanded method, not viewing it as a new method. 427 + 363 = 790 4 2 7 + 3 6 3 7 9 0 1	Know number bonds to 100 Use place value and partitioning when solving addition problems Recognise and use place value in a 3-digit number Add pairs of numbers up to 3-digits Solve missing number problems 11+7 = 9 + ☐ 29 + ☐ + ☐ = 100 Use inverse operation to check answers

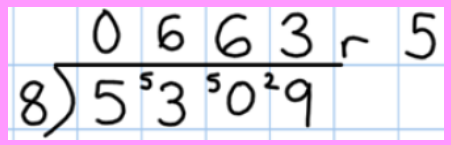
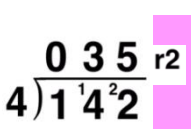
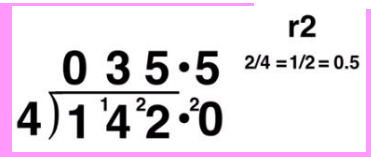
	Subtraction	Know pairs with each total to 100 Subtract 1-, 2- and 3-digit numbers from 3-digit numbers using place value knowledge, number facts and partitioning Perform place value subtractions without a struggle. (E.g. 536 – 30 = 506) Subtract multiples and near multiples of 10 and 100 Find change from £1, £5 and £10.	Use expanded column subtraction using partitioning, leading to exchanging and progressing up to 3-digit numbers 942 – 214 = 728 30 12 900 40 2 - 200 10 4 700+20+8 = 728 If understanding of expanded method is secure, children may use compact column subtraction, ensuring the links are made between the two.	Know pairs of numbers to 100 and use related subtraction facts Subtract multiples of 10 and 100 Subtract up to 3-digit numbers using partitioning, place value and number facts Recognise and use place value in a 3-digit number Solve missing number problems □ = 97 - 34 164 - □ = 108 Estimate and use inverse operation to check answers
	Multiplication	Know all multiplication facts in the 2x, 3x, 4x, 5x, 8x and 10x tables, making links to family of facts Multiply whole numbers by 10 and 100 Use place value and number facts in mental multiplication Partition teen numbers to multiply by a single-digit number. (E.g. 3 x 14 as 3 x 10 and 3 x 4) Double numbers up to 50 using partitioning	Begin to multiply using partitioning with the grid method, up to 2-digit x 1-digit × | 30 | 5 7 | 210 | 35 210 + 35 = 245 If understanding of grid method is secure, develop onto long multiplication method, starting with the units 34 x 5 = 170 34 × 5 = 20 + 150 = 170	Know all multiplication facts in the 2x, 3x, 4x, 5x, 8x and 10x tables Solve missing number and multiplication problems, using commutativity and family of facts Use mental and written methods to solve 2-digit x 1-digit numbers

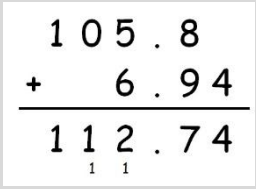
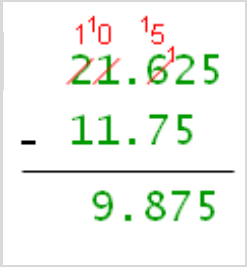
	Division	Recall all the division facts derived from the 2x, 3x, 4x, 5x, 8x and 10x tables. Divide whole numbers by 10 or 100 to give whole number answers Use place value and number facts in mental division. (E.g. 84 ÷ 4 is half of 42 or halve it and halve it again) Halve even numbers to 100, halve odd numbers to 20	Use grouping on a number line, progressing to remainders 13 ÷ 3 = 4 r1  Developing onto larger numbers, using multiplication to count up in chunks, progressing to remainders 65 ÷ 5 = 13  10+2+1 = 13	Recall division facts derived from the 2x, 3x, 4x, 5x, 8x and 10x tables Use mental and written methods to divide 2-digit numbers by 1-digit numbers Recognise that division is not commutative Solve division and missing number problems
		Mental Calculation/Method	**Written Calculation/Method**	**Key Skills**
Year 4	**Addition**	Know and use number bonds to 100 and to £1 Add to the next hundred, pound and whole number. (E.g. 234 + 66 = 300, 3.4 + 0.6 = 4) Add any two 2-digit numbers by partitioning or counting on Perform place value additions without a struggle. (E.g. 300 + 8 + 50 + 4000 = 4358) Add multiples and near multiples of 10, 100 and 1000. Add £1, 10p, 1p to amounts of money Use place value and number facts to add 1-, 2-, 3- and 4-digit numbers where a mental calculation is appropriate (E.g. 4004 + 156 by knowing that 6+4=10 and that 4004+150= 4154 so total is 4160)	Become more confident using compact column addition, progressing up to 4-digit numbers and decimals. 42.7 + 89.5 = 132.2 42.7 + 89.5 132.2 1 1	Use partitioning, place value knowledge and counting on to add numbers Know number bonds to 100 Recognise and use place value up to 4-digits Use compact column addition to add numbers up to 4-digits and decimals Use rounding to estimate answers and inverse to check answers Solve missing number problems and 2-step problems using appropriate methods

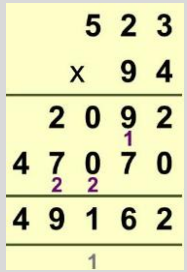
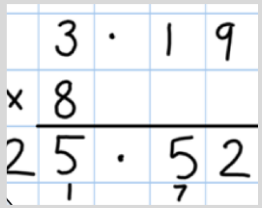
	Subtraction	Know and use number bonds to 100 and £1 Perform place value subtractions without a struggle. (E.g. 4736 – 706 = 4030, etc.) Subtract multiples and near multiples of 10, 100 and 100 Subtract, when appropriate, by counting back, using partitioning, place value and number facts. Subtract £1, 10p, 1p from amounts of money Find change from £10, £20 and £50.	Begin to use compact column subtraction, progressing to 4-digit numbers and decimals 6232 – 4814 = 1418 	Select an appropriate mental or written method, depending on the question Recognise and use place value up to 4-digits Use rounding to estimate answers and inverse to check answers Solve missing number and 2-step problems using appropriate methods
	Multiplication	Know all the multiplication facts up to 12 x 12 Recognise and find factor pairs Multiply whole numbers and one-place decimals by 10, 100, 1000 Partition 2-digit numbers to multiply by a single-digit number mentally (E.g. 4 x 24 as 4 x 20 and 4 x 4) Multiply near multiples using rounding (E.g. 33 x 19 as 33 x 20 – 33) Find doubles to double 100 and beyond using partitioning Multiply numbers by 0 and 1 and multiply 3 numbers together, using place value and number facts	Continue developing partitioning using grid method, progressing up to 3-digit x 1-digit numbers  Continue to develop long multiplication method, progressing up to 3-digit x 1-digit numbers, starting with the units 134 x 8 = 1072 	Recall multiplication facts up to 12 x 12, including family of facts Multiply whole numbers by 10 and 100 Use mental or written methods to multiply numbers up to 3-digit x 1-digit Solve problems using distributive law 39x7 = 30x7 + 9x7 and associative law (2x3) x 4 = 2 x (3x4)

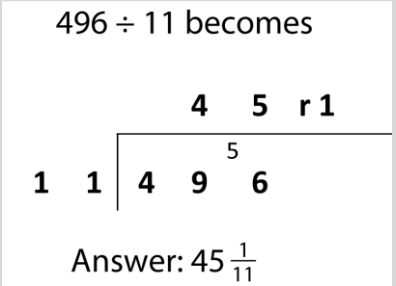
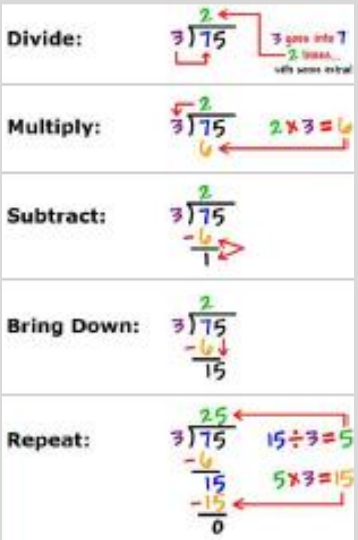
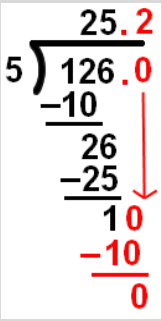
	Division	Recall all the division facts up to 12x table Divide whole numbers by 1, 10, 100 using place value Use place value and number facts in mental division (E.g. 245 ÷ 20 is double 245 ÷ 10) Find halves of even numbers to 200 and beyond using partitioning Begin to halve amounts of money (E.g. half of £52.40 = £26.20)	Continue using grouping to count up on a number line, using larger numbers. Once children have a secure understanding, progress onto short division, dividing 2- or 3-digit numbers by a 1-digit number 96 ÷ 8 = 12 918 ÷ 6 = 153 	Recall and derive related division facts up to 12x table Divide whole numbers by 1, 10 and 100 using place value Use mental and written methods to divide up to 3-digit numbers by a 1-digit number and give a remainder as a whole number. Find unit fractions of amounts Solve two-step problems using appropriate operations and methods
	Overview of Upper KS2	Children move on from dealing mainly with whole numbers to performing arithmetic operations with both decimals and fractions. They will consolidate their use of written procedures in adding and subtracting whole numbers with up to 7 digits and also decimal numbers with up to two decimal places. Mental strategies for adding and subtracting increasingly large numbers will also be taught. These will draw upon children's robust understanding of place value and knowledge of number facts. Efficient and flexible strategies for mental multiplication and division are taught and practised, so that children can perform appropriate calculations even when the numbers are large, such as 40,000 x 6 or 40,000 ÷ 8. In addition, it is in Y5 and Y6 that children extend their knowledge and confidence in using written algorithms for multiplication and division. Fractions and decimals are also added, subtracted, divided and multiplied, within the bounds of children's understanding of these more complicated numbers, and they will also calculate simple percentages and ratios. Negative numbers will also be added and subtracted.		
		Mental Calculation/Method	**Written Calculation/Method**	**Key Skills**
Year 5	**Addition**	Know numbers bonds to 1 and to the next whole number Add one or two-digit multiples of 10, 100, 1000, 10,000 and 100,000. (E.g. 8000 + 7000 or 600,000 + 700,000) Add near multiples of 10, 100, 1000, 10,000 and 100,000 to other numbers. (E.g. 82,472 + 30,004) Add decimal numbers which are near multiples of 1 or 10, including money. *(E.g. 6·34 + 1·99 or £34·59 + £19·95)*	Use compact column addition with numbers larger than 4-digits and up to 2 decimal places. 172.83 + 54.68 = 227.51 	Recognise and use place value in numbers up to 1,000,000 Add large numbers using knowledge of place value and number facts Use expanded column addition to add pairs of 4-, 5- and 6-digit numbers Use rounding to check answers Solve multi-step and missing number problems using appropriate methods

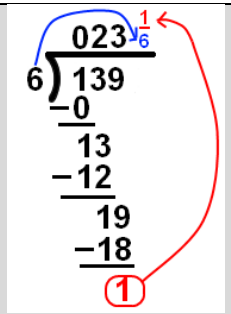
	Subtraction	Subtract increasingly larger numbers, using appropriate strategies Subtract decimal numbers which are near multiples of 1 or 10, including money. (E.g. 6·34 – 1·99 or £34·59 – £19·95) Recognise fraction complements to 1 and to the next whole number. (E.g. $1\ ^{2}/_{5} + {}^{3}/_{5} = 2$) 4 – 5	Use compact column subtraction with numbers larger than 4-digits and up to 2 decimal places, including exchanging 8.97 – 2.82 = 6.15 	Recognise and use place value in numbers up to 1,000,000 Use appropriate mental and written methods to calculate answers Use rounding, estimation and inverse to check answers Solve multi-step problems, using appropriate methods/operations and explaining why
	Multiplication	Recall all the multiplication facts up to 12 x 12, including family of facts Multiply whole numbers and one-and two-place decimals by 10, 100, 1000, 10,000 Use knowledge of factors and multiples in multiplication (E.g. 43 x 6 is double 43 x 3, and 28 x 50 is ½ of 28 x 100 = 1400) Use doubling and halving as a strategy in mental multiplication (E.g. 58 x 5 = half of 58 x 10, and 34 x 4 is 34 doubled twice) Partition 2-digit numbers, including decimals, to multiply by a single-digit number mentally. (E.g. 6 x 27 as 6 x 20 (120) plus 6 x 7 (42) making 162 or 6.3 x 7 as 6 x 7 plus 0.3 x 7) Double amounts of money by partitioning. (E.g. £37.45 doubled = £37 doubled (£74) plus 45p doubled (90p) £74.90)	Continue developing long multiplication method when multiplying by a 2-digit number, progressing up to 4-digit x 2-digit numbers, starting with the units 18 x 13 = 234  Make links to short multiplication method, when multiplying by a 1-digit number 6481 x 9 = 58329 	Identify multiples, factors and prime numbers using secure multiplication tables to 12 x 12 Recognise and use square and cube numbers Multiply whole numbers and decimals by 10, 100 and 1000 Use mental and written methods to multiply numbers up to 4-digit x 2-digit Solve problems, including multiple operations, scaling and fractions, using number facts to help solve them

	Division	Recall all the division facts up to 12x table Divide whole numbers by 1, 10, 100, 1000, 10,000 to give whole number answers or answers with 1, 2 or 3 decimal places Use doubling and halving as mental division strategies (E.g. 34 ÷ 5 is (34 ÷ 10) x 2) Use knowledge of multiples and factors in mental division (E.g. 246 ÷ 6 is 123 ÷ 3 and we know that 525 divides by 25 and by 3) Halve amounts of money by partitioning (E.g. Half of £75.40 = half of £75 (37.50) plus half of 40p (20p) which is £37.70)	Develop use of short division, including remainders, to divide up to 4-digit numbers by a 1-digit number 5309 ÷ 8 = 663 r5  Begin to develop understanding of expressing remainders as whole numbers, fractions and decimals 142 ÷ 4 = 35 r2  142 ÷ 4 = 35·5 or 35 ½  2/4 = 1/2 = 0.5	Recall all division facts up to 12x table Divide whole numbers and decimals by 1, 10, 100, 1000 or 10,000 Use doubling and halving as mental division strategies Use mental strategies to divide, such as place value, number facts, chunking, halving, Find unit fractions of 2 and 3-digit numbers Solve problems including multiple operations, fraction scaling and missing number problems Use inverse of division to check answers Begin to express remainders in short division as whole numbers, fractions and decimals
		Mental Calculation/Method	**Written Calculation/Method**	**Key Skills**

Year 6	**Addition**	Know number bonds to 100 and use these to derive related facts. (E.g. 3.46 + 0.54 = 4) Derive number bonds to 1000 Add small and large whole numbers where the use of place value or number facts makes the calculation do-able mentally (E.g. 34,000 + 8000.) Add negative numbers in a context such as temperature where the numbers make sense. Add two 1-place decimal numbers or two 2-place decimal numbers less than 1 (E.g. 4.5 + 6.3 or 0.74 + 0.33)	Use compact column addition with larger numbers, including money and measures, demonstrating secure understanding of place value. 105.8 + 6.94 = 112.74 	Derive swiftly and without difficulty, number bonds to 1000 Recognise and use place value in numbers up to 10,000,000 Use appropriate mental or written method to add larger numbers, including decimals Use estimation and rounding to check answers Solve multi-step and missing number problems using appropriate methods
	Subtraction	Use number bonds to 100 to perform mental subtraction of any pair of integers by complementary addition. (E.g. 1000 – 654 as 46 + 300 in our heads) Use partitioning, place value and number facts to subtract larger numbers mentally, by counting back or finding the difference, including decimals Subtract negative numbers in a context such as temperature where the numbers make sense.	Use compact column subtraction to subtract large numbers, money and measures, including those with a different number of decimal places 21.625 – 11.75 = 9.875 	Recognise and use place value in numbers up to 10,000,000 Round numbers and decimals to required degree of accuracy Use appropriate mental or written method to subtract larger numbers, including decimals Use estimation, rounding and inverse to check answers Solve multi-step and missing number problems using appropriate methods/operations and explaining why

	Multiplication	Know and recall all the multiplication facts up to 12 x 12, including family of facts Multiply whole numbers and decimals with up to three places by 10, 100 or 1000 Identify common factors, common multiples and prime numbers and use factors in mental multiplication. (E.g. 326 x 6 is 652 x 3 which is 1956) Use place value and number facts in mental multiplication. (E.g. 40,000 x 6 = 24,000 and 0.03 x 6 = 0.18) Use doubling and halving as mental multiplication strategies, including to multiply by 2, 4, 8, 5, 20, 50 and 25 (E.g. 28 x 25 is ¼ of 28 x 100 = 700) Multiply one and two-place decimals by numbers up to and including 10 using place value and partitioning. (E.g. 3.6 x 4 is 12 + 2.4)	Use long multiplication when multiplying by a 2-digit number 523 x 94 = 49162  Multiplying decimals, using long and short multiplication 3.19 x 8 = 25.52 	Identify multiples, factors and prime numbers using secure multiplication tables to 12 x 12, including family of facts Multiply whole numbers and decimals by 10, 100 and 1000. Use short multiplication to multiply numbers by 1-digit numbers Use long multiplication to multiply numbers by 2-digit numbers and decimals Solve multi-step problems including multiple operations Round numbers to a specific degree of accuracy Use estimation to check answers to problems

	Division	Recall all the division facts up to 12x table. Divide whole numbers by powers of 10 to give whole number answers or answers with up to three decimal places. Identify common factors, common multiples and prime numbers and use factors in mental division. (E.g. 438 ÷ 6 is 219 ÷ 3 which is 73) Use doubling and halving as mental division strategies, e.g. to divide by 2, 4, 8, 5, 20 and 25. Divide one and two place decimals by numbers up to and including 10 using place value. (E.g. 2.4 ÷ 6 = 0.4 or 0.65 ÷ 5 = 0.13, £6.33 ÷ 3 = £2.11) Halve decimal numbers with up to 2 places using partitioning Know and use equivalence between simple fractions, decimals and percentages, including in different contexts.	Continue to secure understanding of short division, expressing remainders as whole numbers, fractions and decimals. Progressing onto dividing by 2-digit numbers  Develop onto long division method, including expressing remainders as whole numbers, fractions and decimals  	Recall all the division facts up to 12x table. Divide whole numbers by powers of 10 to give whole number answers or answers with up to three decimal places. Use mental strategies to solve problems, including chunking, place value and derived number fact knowledge Use long or short division appropriately to solve problems and express remainders accordingly Round answers to the nearest 10, 100, 1000 or beyond Solve multi-step problems, including multiple operations and missing numbers , using estimation to check answers

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