



Glory Farm Primary School

Draft calculation policy 2017

Addition

Year R

Number bonds

Children will understand the concept of number bonds within 10 by taking part in practical activities.

Mental calculation

Children will count reliably with numbers from 1 – 20, place them in order and say one more than a given number. Children will use quantities and objects to add two single digit numbers and count on to find the answer.

Children will add

- Using equipment (Multilink, Numicon, compare bears, counters, fingers etc)
- Part-part whole
- Using a number line
- Pictorial drawings

Children will read, write and interpret mathematical statements involving addition (+) and equals (=) signs

- Part-part whole
- Number sentences

Problem solving

Children will solve one-step problems that involve addition, using concrete objects and pictorial representations.

Calculations should be written in sequence with children encouraged to work out the total

$$\text{Eg } 4 + 2 = \square$$

Children need to be able to provide reasoning to support their calculations.

Key vocabulary

Addition, add, more, sum, total, equals, altogether, double, half, halve, one more, two more, how many more to make ...?, is the same as, number bonds

Subtraction

Year R

Number bonds

Children will understand the concept of number bonds and subtraction facts within 10 by taking part in practical activities.

Mental calculation

Children will subtract reliably with numbers from 1 – 20, place them in order and say one less than a given number. Children will use quantities and objects to subtract two single digit numbers and count back to find the answer.

Children will subtract

- Using equipment (Multilink, Numicon, compare bears, counters, fingers etc)
- Part-part whole
- Using a number line
- Pictorial drawings

Children will read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs

- Part-part whole
- Number sentences

Problem solving

Children will solve one-step problems that involve subtraction, using concrete objects and pictorial representations.

Calculations should be written in sequence with children encouraged to work out the total

$$\text{Eg } 9 - 6 = \square$$

Children need to be able to provide reasoning to support their calculations.

Key vocabulary

Subtract, take away, how many are left/left over? One less, two less, how many fewer is ... than ...? difference between, equals, is the same as, number bonds

Multiplication

Year R

Mental calculation

Children will understand multiplication is related to doubling.

Problem solving

Children will solve one-step doubling problems involving multiplication by calculating the answer using concrete objects and pictorial representations

- Using practical equipment (multilink, Numicon, compare bears, counters, fingers etc)
- Pictorial drawings

Key vocabulary

Double, doubling, same, two times, two lots of, pattern

Division

Year R

Mental calculation

Children will understand division is related to sharing and halving into equal groups (repeated subtraction)

Sharing

Children will use concrete apparatus

Grouping

Children will apply their counting skills to grouping

Halves

Children will find halves of shapes and number of objects

Problem solving

Children will solve one-step problems involving division, by calculating the answer using concrete objects.

- Using equipment (Multilink, Numicon, compare bears, counters, fingers etc)

Key vocabulary

Dividing, grouping, sharing, halving, pattern

Addition

Year 1

Number bonds

Children will know and use number bonds facts within 20

Mental calculation

Children will add one-digit and two-digit numbers to 20, including zero

- Using a 100 square
- Using a number line
- Using equipment (Dienes, Numicon, compare bears, counters etc)
- Part-part whole
- Pictorial drawings
- Bar modelling (including Cuisenaire)

Children will read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

- Part-part whole
- Bar modelling
- Balance scales

Year 2

Number bonds

Children will know and use addition facts to 20 fluently, and use related facts up to 100 (multiples of 5 and 10)

Mental calculation

Children will add numbers using concrete objects, pictorial representations and mentally, including:

- A two-digit and ones
- A two-digit number and tens
- Two two-digit numbers
- Adding three one-digit number
- Bridging 10
 - Using a 100 square
 - Using a number line and blank number lines
 - Using equipment (ten sticks and Dienes, Numicon, compare bears, counters etc)
 - Part-part whole
 - Pictorial drawings
 - Expanded written method
 - Recording in columns (supporting place value) which prepares for formal written methods with larger numbers
 - Bar modelling

Children will show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

	Children will also recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
<p>Problem solving Children will solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems</p> <ul style="list-style-type: none"> - Calculations should be written either side of the equality sign (=) so that the sign is not interpreted as the answer Eg $8 = 3 + 5$ $2 + 3 = 4 + 1$ - Missing numbers need to be placed in all possible places Eg $3 + 4 = \square$ $\square = 3 + 4$ $3 + \square = 7$ $7 = \square + 4$ 	<p>Problem solving Children will solve problems with addition:</p> <ul style="list-style-type: none"> - Using concrete objects and pictorial representations, including those involving numbers, quantities and measures - Applying their increasing knowledge of mental and written methods
<p>Key vocabulary Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more ... ten more ..., how many more to make ...? how many more is ... than ...? how much more is ...?, equals, is the same as, number bonds/pairs, missing number</p>	<p>Key vocabulary Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more ... ten more ... one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...?, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary</p>

Subtraction

Year 1	Year 2
<p>Number bonds Children will know and use number bonds and related subtraction facts within 20</p>	<p>Number bonds Children will know and use addition and subtraction facts to 20 fluently, and use related facts up to 100 (multiples of 5 and 10)</p>
<p>Mental calculation Children will subtract one-digit and two-digit numbers to 20, including zero</p> <ul style="list-style-type: none"> - Using a 100 square - Using a number line - Using equipment (Dienes, Numicon, compare bears, counters etc) - Part-part whole - Pictorial drawings - Bar modelling <p>Children will read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <ul style="list-style-type: none"> - Part-part whole - Bar modelling - Balance scales 	<p>Mental calculation Children will subtract numbers using concrete objects, pictorial representations and mentally, including:</p> <ul style="list-style-type: none"> - A two-digit and ones - A two-digit number and tens - Two two-digit numbers - Bridging 10 <ul style="list-style-type: none"> • Using a 100 square • Using a number line and blank number lines • Using equipment (ten sticks and Dienes, Numicon, compare bears, counters etc) • Part-part whole • Pictorial drawings • Expanded written method • Recording in columns (supporting place value) which prepares for formal written methods with larger numbers • Bar modelling <p>Children will show that addition of two numbers can be done</p>

	<p>in any order (commutative) and subtraction of one number from another cannot.</p> <p>Children will also recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p>
<p>Problem solving</p> <p>Children will solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems</p> <ul style="list-style-type: none"> - Calculations should be written either side of the equality sign (=) so that the sign is not interpreted as the answer Eg $8 = 10 - 2$ $13 - 5 = 10 - 2$ - Missing numbers need to be placed in all possible places Eg $13 - 4 = \square$ $\square = 13 - 4$ $13 - \square = 7$ $7 = \square - 6$ 	<p>Problem solving</p> <p>Children will solve problems with subtraction:</p> <ul style="list-style-type: none"> - Using concrete objects and pictorial representations, including those involving numbers, quantities and measures - Applying their increasing knowledge of mental and written methods
<p>Key vocabulary</p> <p>Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number</p>	<p>Key vocabulary</p> <p>Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary</p>

Multiplication

Year 1

Mental calculation

Children will count in twos, fives and tens confidently

- Using pairs of socks
- Using hands and fingers
- Using equipment (Numicon, compare bears, counters, multi-link etc)
- Using 100 squares (to see the pattern)
- Using arrays
- Using groups
- Using pictorial drawings

Children will understand multiplication is related to doubling and combining groups of the same size (repeated addition)

Year 2

Mental calculation

Children will recall and use multiplication facts for the 2, 3, 5 and 10 multiplication tables, including recognising odd and even numbers

- Using equipment (Numicon, compare bears, counters, multi-link etc)
- Using 100 squares (to see the pattern)
- Using a blank number line
- Using arrays
- Using groups
- Using pictorial drawings

Children will calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$)

Children will show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

<p>Problem solving Children will solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays</p> <ul style="list-style-type: none"> - Using equipment (ten sticks and Dienes, Numicon, compare bears, counters etc) - Pictorial drawings - Using arrays 	<p>Problem solving Children will solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p>
<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, doubling, array, number patterns</p>	<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, groups of, times, once, twice, three times ... ten times, repeated addition, equal groups of, doubling, array, row, column, number patterns, multiplication table, multiplication fact</p>

Division

Year 1

Mental calculation

Children will understand division is related to sharing and halving into equal groups (repeated subtraction)

Sharing

Children will use concrete apparatus

Grouping

Children will apply their counting skills to grouping

Arrays

Children will use arrays as a pictorial representation for division

Halves and quarters

Children will find halves and quarters of shapes and find simple fractions of objects, numbers and quantities

Problem solving

Children will solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays

- Using equipment (ten sticks and Dienes, Numicon, compare bears, counters etc)
- Pictorial drawings

Year 2

Mental calculation

Children will recall and use division facts for the 2, 3, 5 and 10 multiplication tables, including recognising odd and even numbers

- Using equipment (Numicon, compare bears, counters, multi-link etc)
- Using 100 squares (to see the pattern)
- Using a blank number line
- Using arrays
- Using groups
- Using pictorial drawings

Children will calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$)

Children will show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

Problem solving

Children will solve problems involving multiplication and division, using materials, arrays, repeated subtraction, mental methods, and multiplication and division facts, including problems in contexts

Children will be able to find missing numbers in division

<p>- Using arrays</p>	<p>number sentences</p> <p>- Eg $6 \div 2 = \square$ $\square = 6 \div 2$</p> <p>$6 \div \square = 3$ $3 = 6 \div \square$</p> <p>$\square \div 2 = 3$ $3 = \square \div 2$</p>
<p>Key vocabulary Division, dividing, grouping, sharing, halving, number patterns</p>	<p>Key vocabulary Division, dividing, divide, divided by, divided into, grouping, sharing, share, share equally, left, left over, one each, two each, three each ... ten each, groups in pairs, threes ... tens, equal groups of, halving, number patterns, multiplication table, multiplication fact, division fact</p>

In KS2, we encourage the children to continue to use equipment when solving calculations. These include:

- Cuisinaire
- Dienes and ten sticks
- 100 squares
- Number lines
- Numicon
- Counters
- Arrow cards
- Bead strings

Addition

Year 3

Mental calculation

Children will add numbers mentally including:

- A 3-digit number and ones
- A 3-digit number and tens
- A 3-digit number and hundreds
- using a number line to count on
- number facts / place value

Children will estimate the answer to a calculation and use inverse operations to check answers

Written calculation

Children will add numbers with up to three digits, using formal written methods of column addition, including:

- Introduce partitioning column method for 3-digit numbers (no bridging)
- Partitioning column method for 3-digit numbers (with bridging)
- Expanded column method for 3-digit numbers
- Compact column method for 3-digit numbers (no bridging)
- Compact column method for 3-digit numbers (with bridging)

Year 4

Mental calculation

Children will continue to use a number line to count on and number facts / place value to support mental calculations.

Children will estimate and use inverse operations to check answers to calculations

Written calculation

Children will add numbers with up to 4 digits using the formal written methods of column addition where appropriate , including:

- Build on partitioning column method for 4-digit numbers
- Compact column method for 4-digit numbers (with bridging)

<p>Problem solving Children will solve problems, including missing number problems, using number facts, place value, and more complex additions</p>	<p>Problem solving Children will solve addition two-step problems in context, deciding which operations and methods to use and why</p>
<p>Key vocabulary Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more ... ten more ... one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...?, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary</p>	<p>Key vocabulary Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more... ten more... one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...? Equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, inverse</p>

Subtraction

Year 3	Year 4
<p>Mental calculation Children will subtract numbers mentally including:</p> <ul style="list-style-type: none"> • A 3-digit number and ones • A 3-digit number and tens • A 3-digit number and hundreds ○ using a number line to count up ○ number facts / place value ○ taking away <p>Children will estimate the answer to a calculation and use inverse operations to check answers</p>	<p>Mental calculation Children will continue to use number lines to count up, number facts and place value and understand the concept of 'taking away'</p> <p>Children will estimate and use inverse operations to check answers to calculations</p>
<p>Written calculation Children will subtract numbers with up to three digits, using formal written methods of column addition, including:</p> <ul style="list-style-type: none"> • counting up using frog jumps on a number line • introduce partitioning column method (without exchanging) • introduce partitioning column method (with exchanging) – using equipment to support • introduce expanded column subtraction 	<p>Written calculation Children will subtract numbers with up to 4 digits using the formal written methods of column addition where appropriate , including:</p> <ul style="list-style-type: none"> • expanded column subtraction • introduce compact column subtraction
<p>Problem solving Children will solve problems, including missing number problems, using number facts, place value, and more complex additions</p>	<p>Problem solving Children will solve subtraction two-step problems in context, deciding which operations and methods to use and why</p>

Key vocabulary

Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary

Key vocabulary

Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, inverse

Multiplication

Year 3

Mental calculation

Children will count from 0 in multiples of 4, 8, 50 and 100

Children will recall and use multiplication facts for the 3, 4 and 8 multiplication tables

- using counting in steps
- doubling and halving

Written calculation

Children will write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods, including:

- partitioning grid method (2-digit by 1-digit)

Year 4

Mental calculation

Children will count in multiples of 6, 7, 9, 25 and 1000

Children will recall multiplication facts for multiplication tables up to 12 x 12

Children will use place value, known and derived facts to multiply and divide mentally, including:

- multiplying by 0 and 1
- multiplying together three numbers

Children will recognise and use factor pairs and commutativity in mental calculations

Written calculation

Children will multiply two-digit and three-digit numbers by a one-digit number using formal written layout, including:

- partitioning grid method (3-digit by 1-digit)
- partitioning grid method (2-digit by 2-digit)
- partitioning grid method (3-digit by 2-digit)
- introduce ladder method (3-digit by 1-digit)

<p>Problem solving Children will solve problems, including missing number problems, involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects</p>	<p>Problem solving Children will solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</p>
<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, factor, groups of, times, product, once, twice, three times ... ten times, repeated addition, equal, groups of, doubling, array, row, column, number patterns, multiplication table, multiplication fact</p>	<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, factor, groups of, times, product, once, twice, three times ... ten times, repeated addition, equal, groups of, doubling, array, row, column, number patterns, multiplication table, multiplication fact, inverse square, squared cube, cubed</p>

Division	
Year 3	Year 4
<p>Mental calculation Children will recall and use division facts for the 3, 4 and 8 multiplication tables</p> <ul style="list-style-type: none"> • using counting in steps • doubling and halving • grouping • using number facts • jumps on a number line 	<p>Mental calculation Children will recall division facts for multiplication tables up to 12 x 12</p> <p>Children will use place value, known and derived facts to multiply and divide mentally, including:</p> <ul style="list-style-type: none"> • dividing by 1 <p>Children will recognise and use factor pairs and commutativity in mental calculations</p>
<p>Written calculation Children will write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods, including:</p> <ul style="list-style-type: none"> • using counting in steps • doubling and halving • grouping • using number facts • jumps on a number line 	<p>Written calculation Children will divide two-digit and three-digit numbers by a one-digit number using formal written layout, including:</p> <ul style="list-style-type: none"> • using counting in steps • doubling and halving • grouping • using number facts • jumps on a number line • chunking method • introduce short division (where each digit is a multiple of the divisor)

<p>Problem solving Children will solve problems, including missing number problems, involving division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects</p>	<p>Problem solving Children will solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</p>
<p>Key vocabulary Division, dividing, divide, divided by, divided into, left, left over, remainder, grouping, sharing, share, share equally, one each, two each, three each ... ten each, group in, pairs, threes ... tens, equal, groups of, doubling, halving, array, row, column, number patterns, multiplication table, multiplication fact, division fact, inverse</p>	<p>Key vocabulary Division, dividing, divide, divided by, divided into, left, left over, remainder, grouping, sharing, share, share equally, one each, two each, three each ... ten each, group in, pairs, threes ... tens, equal, groups of, doubling, halving, array, row, column, number patterns, multiplication table, multiplication fact, division fact, inverse, square, squared cube, cubed</p>

Addition

Year 5

Mental calculation

Children will add numbers mentally with increasingly large numbers

Children will use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Written calculation

Children will add whole numbers with more than 4 digits, including using formal written methods, including:

- column addition
- column addition involving decimals and money
-

Problem solving

Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Year 6

Mental calculation

Children will perform mental calculations, including with mixed operations and large numbers

Children will use their knowledge of the order of operations to carry out calculations involving the four operations

Children will use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

Written calculation

Children will continue to add using column method

Problem solving

Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Children will solve problems involving addition, subtraction, multiplication and division

Key vocabulary

Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more ... ten more ... one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...?, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, ones boundary, tenths boundary

Key vocabulary

Addition, add, more, and make, sum, total, altogether, double, near double, half, halve, one more, two more... ten more... one hundred more, how many more to make ...? how many more is ... than ...? how much more is ...? Equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, inverse, ones boundary, tenths boundary

Subtraction

Year 5

Mental calculation

Children will subtract numbers mentally with increasingly large numbers

Children will use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Written calculation

Children will subtract whole numbers with more than 4 digits, including using formal written methods, including:

- column subtraction (with exchanging)
- column subtract involving decimals and money

Problem solving

Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Year 6

Mental calculation

Children will perform mental calculations, including with mixed operations and large numbers

Children will use their knowledge of the order of operations to carry out calculations involving the four operations

Children will use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

Written calculation

Children will continue to subtract using column method

Problem solving

Children will solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Children will solve problems involving addition, subtraction, multiplication and division

Key vocabulary

Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, ones boundary, tenths boundary

Key vocabulary

Subtract, take away, how many are left/left over? how many have gone? one less, two less, ten less ... one hundred less, how many fewer is ... than ...? how much less is ...? difference between, equals, is the same as, number bonds/pairs/facts, missing number, tens boundary, hundreds boundary, inverse, ones boundary, tenths boundary

Multiplication

Year 5

Mental calculation

Children will identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

Children will know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers)

Children will establish whether a number up to 100 is prime and recall prime numbers up to 19

Children will multiply numbers mentally drawing upon known facts

Children will multiply whole numbers and those involving decimals by 10, 100 and 1000

Children will recognise and use square numbers and cube numbers, and the notation for squared ² and cubed ³

Written calculation

Children will multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication when multiplying by more than one digit and short multiplication when multiplying by a one-digit number

Year 6

Mental calculation

Children will perform mental calculations, including with mixed operations and large numbers

Children will associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)

Children will identify common factors, common multiples and prime numbers

Written calculation

Children will multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

<p>Problem solving Children will solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes</p> <p>Children will solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>Children will solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p>	<p>Problem solving Children will solve problems involving addition, subtraction, multiplication and division</p> <p>Children will solve problems involving similar shapes where the scale factor is known or can be found</p>
<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, factor, groups of, times, product, once, twice, three times ... ten times, repeated addition, equal, groups of, doubling, array, row, column, number patterns, multiplication table, multiplication fact, inverse square, squared cube, cubed</p>	<p>Key vocabulary Multiplication, multiply, multiplied by, multiple, factor, groups of, times, product, once, twice, three times ... ten times, repeated addition, equal, groups of, doubling, array, row, column, number patterns, multiplication table, multiplication fact, inverse square, squared cube, cubed</p>

Division	
Year 5	Year 6
<p>Mental calculation Children will establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>Children will divide numbers mentally drawing upon known facts</p> <p>Children will divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Mental calculation Children will perform mental calculations, including with mixed operations and large numbers</p>
<p>Written calculation Children will divide numbers up to 4 digits by a one-digit number using the formal written method of short division (bus stop) and interpret remainders appropriately for the context (a number, a fraction, a decimal, rounded up or rounded down)</p>	<p>Written calculation Children will divide numbers up to 4-digit by a two-digit whole number using the formal written method of short division (bus stop), where appropriate for the context</p> <p>Children will divide numbers up to 4-digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p>
<p>Problem solving Children will solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes</p> <p>Children will solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p>	<p>Problem solving Children will solve problems involving addition, subtraction, multiplication and division</p> <p>Children will solve problems involving similar shapes where the scale factor is known or can be found</p>

<p>Children will solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</p>	
<p>Key vocabulary Division, dividing, divide, divided by, divided into, left, left over, remainder, grouping, sharing, share, share equally, one each, two each, three each ... ten each, group in, pairs, threes ... tens, equal, groups of, doubling, halving, array, row, column, number patterns, multiplication table, multiplication fact, division fact, inverse, square, squared cube, cubed</p>	<p>Key vocabulary Division, dividing, divide, divided by, divided into, left, left over, remainder, grouping, sharing, share, share equally, one each, two each, three each ... ten each, group in, pairs, threes ... tens, equal, groups of, doubling, halving, array, row, column, number patterns, multiplication table, multiplication fact, division fact, inverse, square, squared cube, cubed</p>