Dear Parents and Guardians

This booklet is designed to aid your understanding of the way your child will be taught to calculate, in order to help you support your child more effectively with calculations at home.

It is important to bear in mind that if your child is working above age stage expectations they will be working at the level of year groups above their own, and likewise if your child is working below age range expectations, they may be working at the level of year groups below their own.

This new policy is in line with the recently published National Curriculum, and gives an outline of the methods your child will be learning to add, subtract, multiply and divide with. If you would like to see the methods explained in more detail please see the fully policy on our school website.

Lastly, we welcome and encourage you to drop in and ask your child’s class teacher if any questions arise about this, or there are any methods you are unsure about, so that we can work together to help your child succeed.

Helen Leivars
Maths Subject Leader
**Year 1 Key Skills**
- Read and write numbers to 100 in numerals, including 1–20 in words.
- Recall bonds to 10 and 20, and addition facts within 20.
- Count to and across 100.
- Count in multiples of 1, 2, 5 and 10.
- Solve simple one-step problems involving addition, using objects, number lines and pictorial representations.

**Key vocabulary:** add, more, plus, and, make, altogether, total, equal to

**Year 2 Key Skills**
- Add two-digit numbers and ones (e.g., 27 + 6).
- Add two-digit numbers and tens (e.g., 23 + 40).
- Add pairs of two-digit numbers (e.g., 35 + 47).
- Add three single-digit numbers (e.g., 5 + 9 + 7).
- Show that adding can be done in any order.
- Recall bonds to 20 and bonds of tens to 100 (e.g., 30 + 70 etc.).

**Year 3 Key Skills**
- Add two-digit numbers mentally, including those exceeding 100.
- Add numbers with up to three digits, using formal written methods of column addition.
- Add a three-digit number and ones mentally (175 + 8).
- Add a three-digit number and tens mentally (249 + 50).
- Add a three-digit number and hundreds mentally (381 + 400).
- Estimate answers to calculations, using inverse to check answers.

**Key vocabulary:** As Year 1 and sum, tens, ones, partition, addition, column, tens boundary

**Year 4 Key Skills**
- Continue to practise a wide range of mental addition strategies, i.e., number bonds, add the nearest multiple of 10, 100, 1000 and adjust, use near doubles, partitioning and recombining; apply mental and written methods.
- Select the most appropriate method: mental, jottings or written and why.
- Estimate and use inverse operations to check answers to a calculation.

**Key vocabulary:** As Year 1 and sum, tens, ones, partition, addition, column, tens boundary

**Year 5 Key Skills**
- Add numbers mentally with increasingly large numbers, using and practising a range of mental strategies i.e., add the nearest multiple of 10, 100, 1000 and adjust, use near doubles, inverse, partitioning and recombining; using number bonds.
- Add numbers with more than four digits using formal written method of column addition.
- Use rounding to check answers and accuracy.
- Solve multi-step problems in contexts, deciding which operations and methods to use and why.

**Key vocabulary:** As Year 4 and decimal places, decimal point, tenths, hundredths, thousandths

**Year 6 Key Skills**
- Perform mental calculations, including with mixed operations and large numbers, using and practising a range of mental strategies.
- Pupils understand how to add mentally with larger numbers and calculations of increasing complexity.
- Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- Solve multi-step problems in context, deciding which operations and methods to use and why.

**Key vocabulary:** as Year 5.
Subtraction

**Year 1 Subtract from numbers up to 20**
Count back in ones on a numbered number line to take away.

Begin to write number-sentences with – and = signs.

Find the ‘distance between’ including ‘how many more’ and ‘how many less’ is introduced practically by counting on.

**Year 2 Subtract with 2-digit numbers**
Subtract by counting back gradually, using more efficient

Teaching children to bridge through ten can help them to become more efficient, for example 42 - 25:

**Year 3 Subtract with 2-digit and 3-digit numbers**
Partitioned column subtraction method.

89 - 35 = 54

\[ \begin{align*}
72 - 47 &= 25 \\
60 - 20 &= 40 \\
30 + 8 - 40 + 7 &= 10 - 0 + 4 + 6 \\
20 + 5 &= 25
\end{align*} \]

Money: partition as £1 + 30 + 5 etc.

**Year 4 Subtract with up to 4-digit numbers**
Partitioned column subtraction method with ‘exchanging’.

2 754 - 1 562 = 1 192

\[ \begin{align*}
2 000 + 700 + 50 + 4 - 1 000 + 500 + 60 + 2 &= 1 562 - 1 192 \\
1 000 &= 1 000 + 90 + 0 + 2
\end{align*} \]

**Year 5 Subtract with at least 4-digit numbers and measures, money and decimals**
Partitioned column subtraction method.

**Year 6 Subtract with increasingly large and more complex numbers and decimal values**

**Year 1 Key Skills**
- Recall bonds to 10 and 20, and subtraction facts to 20 and within 20.
- Given a number, say one more or one less.
- Subtract with one-digit and two-digit numbers to 20, including zero.
- Count to and over 100, forward and back, from any number.
- Solve simple one-step problems involving subtraction, using concrete objects, number lines and pictorial representations, and missing number problems.

**Year 2 Key Skills**
- Recall and use subtraction facts to 20 fluently, and use related facts up to 100.
- Subtract using concrete objects, pictorial representations, 100 squares and mentally, including: a two-digit number and one, a two-digit number and ten, and two two-digit numbers.
- Show that subtraction of one number from another cannot be done in any order.
- Recognise and use inverse relationship between addition and subtraction, using this to check calculations and missing number problems.
- Solve simple subtraction problems involving measures, using concrete objects, pictorial representation, and also applying increasing knowledge of mental and written methods.

**Key vocabulary:** As Year 1 and difference, count on, strategy, partition, tens, units

**Year 3 Key Skills**
- Subtract mentally a: three-digit number and ones, three-digit number and tens, three-digit number and hundreds.
- Counting up differences as a mental strategy when numbers are close together or near multiples of 10.
- Practise mental subtraction strategies, such as subtracting near multiples of 10 and adjusting (eg subtracting 19 or 21), and select most appropriate methods to subtract, explaining why.
- Estimate answers and use inverse operations to check.
- Solve problems, including missing number problems.

**Key vocabulary:** As Year 2 and exchange, decrease, hundreds, value, digit

**Year 4 Key Skills**
- Subtract by counting on where numbers are close together or they are near to multiples of 10, 100 etc.
- Children select the most appropriate and efficient methods for given subtraction calculations.
- Estimate and use inverse operations to check answers.
- Find 1000 more or less than a given number.
- Count backwards through zero, including negative numbers.
- Solve number and practical problems that involve the above, with increasing large positive numbers.
- Solve subtraction 2-step problems, choosing which operations and methods to use and why.

**Key vocabulary:** As Year 3 and inverse

**Year 5 Key Skills**
- Subtract numbers mentally with increasingly large numbers.
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 million.
- Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.
- Solve subtraction multi-step problems in context, deciding which operations and methods to use and why.

**Key vocabulary:** As Year 4 and tenths, hundredths, decimal point, decimal

**Year 6 Key Skills**
- Children need to utilise and consider a range of mental subtraction strategies, jottings and written methods before choosing how to calculate.
- Solve subtraction multi-step problems in context, deciding which operations and methods to use and why.

**Key vocabulary:** as Year 5
### Multiplication

#### Year 1 Key Skills
- Count in multiples of 2, 5 and 10.
- Make connections between arrays, number patterns, and counting in twos, fives and tens.
- Begin to understand doubling using concrete objects and pictorial representations.
- Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

**Key vocabulary:** groups, lots of, times, array, altogether, multiply, total, count up in...

#### Year 2 Key Skills
- Count in steps of 2, 3 and 5 from zero, and in 10s from any number.
- Recall and use multiplication facts from the 2, 5 and 10 multiplication tables, including recognising odds and evens.
- Write and calculate number statements using the x and = signs.
- Show that multiplication can be done in any order (commutative).
- Pupils use a variety of language to discuss and describe multiplication.

#### Year 3 Key Skills
- Recall multiplication facts for the 2, 3, 4, 5, 8 and 10 multiplication tables, and multiply multiples of 10.
- Write and calculate number statements using the multiplication tables they know, including two-2-digit multiplied by a single-digit, drawing upon mental methods, and progressing to reliable written methods.
- Solve multiplication problems, including missing number problems.
- Develop mental strategies using commutativity (eg 4 x 12 = 4 x 5 x 12 = 20 x 12 = 240)
- Develop efficient mental methods to solve a range of problems eg using commutativity (4 x 12 = 5 x 12 = 60) and for missing number problems ? x 5 = 10, 3 x ? = 18, ? x ? = 32.
- Solve simple problems in contexts, deciding which operations and methods to use.

**Key vocabulary:** As Year 1 and multiplied by, column, row, repeated addition, commutative, sets of, equal groups, _ times as big as, once, twice, three times etc

#### Year 4 Key Skills
- Count in multiples of 6, 7, 9, 25 and 1000.
- Recall multiplication facts for all multiplication tables up to 12 x 12.
- Use place value, known facts and derived facts to multiply mentally, eg multiply by 1, 10, 100, by 0, or to multiply 3 numbers.
- Use commutativity and other strategies mentally 3 x 6 : 6 x 3, 2 x 6 x 5 = 10 x 6, 39 x 7 = 30 x 7 + 9 x 7.
- Solve problems with increasingly complex multiplication in a range of contexts.

**Key vocabulary:** As Year 3 and square, factor, integer, decimal, short/long multiplication, ‘carry’

#### Year 5 Key Skills
- Identify multiples and factors, using knowledge of multiplication tables to 12 x 12.
- Multiply and divide integers and decimals by 10, 100 and 1000.
- Recognise and use square and cube numbers and their notation.
- Solve problems where larger numbers are decomposed into their factors.
- Solve problems involving combinations of operations, choosing and using calculations and methods appropriately.

**Key vocabulary:** As Year 4 and cubed

#### Year 6 Key Skills
- Recall multiplication facts for all times tables up to 12 x 12.
- Multiply multi-digit numbers, up to four-digits by two-digits, using long multiplication.
- Solve multi-step problems in a range of contexts, choosing appropriate combinations of operations and methods.

**Key vocabulary:** as Year 5 and tenths, hundredths
Through grouping and sharing small quantities, children begin to understand, division, and finding simple fractions of objects, numbers and quantities. Make connections between arrays, number patterns, and counting in twos, fives and tens. Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations arrays with the support of the teacher.

**Key vocabulary:** share, share equally, one each, two each ..., group, groups of, lots of, array

Pupils practise mental methods and extend this to three
Solve one

Pupils develop reliable written methods for division, starting with use place value, known and derived facts to multiply and divide mentally, use estimation to check answers to calculations and determine

Divide up to 3
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the ×, ÷ and = signs.

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

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in all operations

**Key vocabulary:** As Year 1 and divide, divided by, divided into, division, grouping, number line, left, left over

Year 2 Key Skills
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including doubling, connect the 2, 4 and 8s.
- Write and calculate mathematical statements 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.
- Pupils develop efficient mental methods.
- Pupils develop reliable written methods for division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written method of short division.
- Solve problems, in contexts, and including missing number problems, involving multiplication and division.

**Key vocabulary:** As Year 2 and inverse, short division, 'carry', remainder, multiple

Year 3 Key Skills
- Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 multiplication tables (through doubling, connect the 2, 4 and 8s).
- Write and calculate mathematical statements 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.
- Pupils develop efficient mental methods.
- Pupils develop reliable written methods for division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written method of short division.
- Solve problems, in contexts, and including missing number problems, involving multiplication and division.

**Key vocabulary:** As Year 3 and divisible by, factor

Year 4 Key Skills
- Recall multiplication and division facts for all numbers up to 12 × 12.
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying and dividing by 10 and 100 and 1.
- Pupils practise mental methods and extend this to three-digit numbers to derive facts, for example 200 × 3 = 600 so 600 ÷ 3 = 200.
- Pupils practise to become fluent in the formal written method of short division with exact answers when dividing by a one-digit number.
- Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as three cakes shared equally between 10 children.

**Key vocabulary:** As Year 4 and quotient, prime number, prime factors, composite number (non-prime)

Year 5 Key Skills
- Recall and use multiplication and division facts for all numbers up to 12 × 12.
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two number.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- Divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- Use multiplication and division as inverses.
- Interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding.
- Solve problems involving combinations of all four operations.

**Key vocabulary:** As Year 4 and quotient, prime number, prime factors, composite number (non-prime)

Year 6 Key Skills
- Recall and use multiplication and division facts for all numbers up to 12 × 12.
- Identify common factors, common multiples and prime numbers.
- Use estimation to check answers to calculations and determine accuracy.
- Divide numbers up to four 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. Use short division where appropriate.
- Use written division methods in cases where the answer has up to two decimal places.
- Solve problems which require answers to be rounded to specified

**Key vocabulary:** As Year 5 and common factor, common multiple