Ashwell Primary School
Maths Curriculum
Number, Place Value and Four Operations (counting and calculations)
Skills & Knowledge Progression

NURSERY – Number and Counting

Core knowledge to be acquired

- Fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.

Key Vocabulary:

Numbers to five, zero, share, lots, how many more, how many left, less, fewer, have you got enough?, pattern, shape, number, square, triangle, circle, rectangle, heavy, light, full, empty, long, longer, longest, short, shorter, shortest, length, in, on, inside, under.

What comes next:	
	- Count objects, actions and sounds.
	- Subitise.
	- Link the number symbol (numeral) with its cardinal number value
	- Count beyond ten.
	- Compare numbers
	- Understand the 'one more than/one less than' relationship between consecutive numbers.
	- Explore the composition of numbers to 10.
	- Automatically recall number bonds for numbers 0–10.

RECEPTION – Number, Counting, Addition and Subtraction

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count objects, actions and sounds. - Subitise. - Link the number symbol (numeral) with its cardinal number value - Count beyond ten. - Compare numbers - Understand the 'one more than/one less than' relationship between consecutive numbers. - Explore the composition of numbers to 10. - Automatically recall number bonds for numbers 0–10.	Numbers to twenty, odd, even, count on/back, the same as, pattern, compare, order, size, next, between, estimate, nearly, close to, enough, ones, tens, digit, one more/less, ten more/less, sum, total, altogether, double, take away, difference between, sharing, doubling, halving, parts, whole.
EARLY LEARNING GOALS - NUMBER	**EARLY LEARNING GOALS – NUMERICAL PATTERNS**
- Have a deep understanding of number to 10, including the composition of each number. - Subitise (recognise quantities without counting) up to 5. - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	- Verbally count beyond 20, recognising the pattern of the counting system. - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other Quantity`. - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally
Prior knowledge / skills this builds on:	**What comes next:**
- Fast recognition of up to 3 objects, without having to count them individually ('subitising'). - Recite numbers past 5. - Say one number for each item in order: 1,2,3,4,5. - Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). - Show 'finger numbers' up to 5. - Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. - Experiment with their own symbols and marks as well as numerals. - Solve real world mathematical problems with numbers up to 5. - Compare quantities using language: 'more than', 'fewer than'.	- Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number - Count in multiples of twos, fives and tens - Count, read and write numbers to 100 in numerals - Given a number, identify one more and one less - Read and write numbers from 1 to 20 in numerals and words - Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least - Represent and use number bonds and related subtraction facts within 20 - Add and subtract one-digit and two-digit numbers to 20, including zero - Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ − 9 - Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

YEAR 1 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number - Count in multiples of twos, fives and tens - Count, read and write numbers to 100 in numerals - Given a number, identify one more and one less - Read and write numbers from 1 to 20 in numerals and words - Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least - Represent and use number bonds and related subtraction facts within 20 - Add and subtract one-digit and two-digit numbers to 20, including zero - Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 - Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	Numbers to one hundred, greater than, less than, forwards, backwards, equal to, equivalent to, halfway between, most, least, many, multiple of, addition, half, halve, subtract, number bonds, missing number, multiplication, multiply, multiplied by, grouping, array, division, divide, divided by, grouping, sharing.

Prior knowledge / skills this builds on:	What comes next:
- Count objects, actions and sounds. - Subitise. - Link the number symbol (numeral) with its cardinal number value - Count beyond ten. - Compare numbers - Understand the 'one more than/one less than' relationship between consecutive numbers. - Explore the composition of numbers to 10. - Automatically recall number bonds for numbers 0–10.	- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward - Read and write numbers to at least 100 in numerals and in words - Compare and order numbers from 0 up to 100; use <, > and = signs - Recognise the place value of each digit in a two-digit number (tens, ones) - Identify, represent and estimate numbers using different representations, including the number line - Use place value and number facts to solve problems - Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers - Add and subtract numbers using concrete objects and pictorial representations, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers

- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems
- Solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- 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 multiplication (×), division (÷) and equals (=) signs
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

YEAR 2 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward - Read and write numbers to at least 100 in numerals and in words - Compare and order numbers from 0 up to 100; use <, > and = signs - Recognise the place value of each digit in a two-digit number (tens, ones) - Identify, represent and estimate numbers using different representations, including the number line - Use place value and number facts to solve problems - Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers - Add and subtract numbers using concrete objects and pictorial representations, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers	thousand, threes, fours (and so on), tally, sequence, continue, predict, hundreds, one-, two- or three-digit number, place value, represents, exchange, regroup(ing), times, repeated addition, divided into, share equally, left over, equal groups of, row, column, multiplication table, times tables.

- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems
- Solve problems with addition and subtraction:
    - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
    - applying their increasing knowledge of mental and written methods
- 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 multiplication (**x**), division (÷) and equals (=) signs
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Prior knowledge / skills this builds on:	**What comes next:**
- Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number - Count in multiples of twos, fives and tens - Count, read and write numbers to 100 in numerals - Given a number, identify one more and one less - Read and write numbers from 1 to 20 in numerals and words - Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least - Represent and use number bonds and related subtraction facts within 20 - Add and subtract one-digit and two-digit numbers to 20, including zero - Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 - Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	- Count from 0 in multiples of 4, 8, 50 and 100 - Compare and order numbers up to 1000 - Read and write numbers to 1000 in numerals and in words - Find 10 or 100 more or less than a given number - Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - Identify, represent and estimate numbers using different representations - Solve number problems and practical problems involving previous points above. - Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds - Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction - Estimate the answer to a calculation and use inverse operations to check answers - Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction - Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables - Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects**.**

YEAR 3 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count from 0 in multiples of 4, 8, 50 and 100 - Compare and order numbers up to 1000 - Read and write numbers to 1000 in numerals and in words - Find 10 or 100 more or less than a given number - Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - Identify, represent and estimate numbers using different representations - Solve number problems and practical problems involving previous points above. - Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds - Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction - Estimate the answer to a calculation and use inverse operations to check answers - Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction - Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables - Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods - Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.	factor of, product, Roman numerals, rounding, round up/down, round to nearest, remainder.

Prior knowledge / skills this builds on:	What comes next:
- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward - Read and write numbers to at least 100 in numerals and in words - Compare and order numbers from 0 up to 100; use <, > and = signs - Recognise the place value of each digit in a two-digit number (tens, ones) - Identify, represent and estimate numbers using different representations, including the number line - Use place value and number facts to solve problems - Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - Add and subtract numbers mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers	- Count in multiples of 6, 7, 9, 25 and 1000 - Order and compare numbers beyond 1000 - Find 1000 more or less than a given number - Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) - Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value - Identify, represent and estimate numbers using different representations - Round any number to the nearest 10, 100 or 1000 - Count backwards through zero to include negative numbers - Solve number and practical problems that involve previous points above and with increasingly large positive numbers - Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

- Add and subtract numbers using concrete objects and pictorial representations, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems
- Solve problems with addition and subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods
- 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 multiplication (×), division (÷) and equals (=) signs
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

- Estimate and use inverse operations to check answers to a calculation
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
- Recall multiplication and division facts for multiplication tables up to 12 × 12
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

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.

YEAR 4 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count in multiples of 6, 7, 9, 25 and 1000 - Order and compare numbers beyond 1000 - Find 1000 more or less than a given number - Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones) - Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value - Identify, represent and estimate numbers using different representations - Round any number to the nearest 10, 100 or 1000 - Count backwards through zero to include negative numbers - Solve number and practical problems that involve previous points above and with increasingly large positive numbers - Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - Estimate and use inverse operations to check answers to a calculation - Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why - Recall multiplication and division facts for multiplication tables up to 12 × 12	ten thousand, hundred thousand, million, consecutive, integer, positive, negative (numbers), inverse, square(d), cube(d).

▪ Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
▪ Recognise and use factor pairs and commutativity in mental calculations
▪ Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
▪ 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.

Prior knowledge / skills this builds on:

- Count from 0 in multiples of 4, 8, 50 and 100
- Compare and order numbers up to 1000
- Read and write numbers to 1000 in numerals and in words
- Find 10 or 100 more or less than a given number
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- Identify, represent and estimate numbers using different representations
- Solve number problems and practical problems involving previous points above.
- Add and subtract numbers mentally, including:
    - a three-digit number and ones
    - a three-digit number and tens
    - a three-digit number and hundreds
- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- Estimate the answer to a calculation and use inverse operations to check answers
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that children know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- Solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

What comes next:

- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- Read, write, order and compare numbers to at least 1,000,000
- Determine the value of each digit in numbers up to 1,000,000
- Read Roman numerals to1000 (M) and recognise years written in Roman numerals
- Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- Solve number problems and practical problems that involve previous points above
- Add and subtract numbers mentally with increasingly large numbers
- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})
- Multiply and divide numbers mentally drawing upon known facts
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- Multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates

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YEAR 5 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 - Read, write, order and compare numbers to at least 1,000,000 - Determine the value of each digit in numbers up to 1,000,000 - Read Roman numerals to1000 (M) and recognise years written in Roman numerals - Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 - Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero - Solve number problems and practical problems that involve previous points above - Add and subtract numbers mentally with increasingly large numbers - Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) - Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers - Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers - Establish whether a number up to 100 is prime and recall prime numbers up to 19 - Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) - Multiply and divide numbers mentally drawing upon known facts - Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 - Multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers - Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context - Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes - Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign - Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates	factor pair, greater/less than or equal to, formula, divisibility, square number, prime number, ascending/descending order.
Prior knowledge / skills this builds on: Count in multiples of 6, 7, 9, 25 and 1000	**What comes next:** Read, write, order and compare numbers up to 10,000,000

- Order and compare numbers beyond 1000
- Find 1000 more or less than a given number
- Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)
- Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value
- Identify, represent and estimate numbers using different representations
- Round any number to the nearest 10, 100 or 1000
- Count backwards through zero to include negative numbers
- Solve number and practical problems that involve previous points above and with increasingly large positive numbers
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Estimate and use inverse operations to check answers to a calculation
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why
- Recall multiplication and division facts for multiplication tables up to 12 × 12
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- 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.

- Determine the value of each digit in numbers up to 10,000,000
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero
- Solve number problems and practical problems that involve previous points above
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Identify common factors, common multiples and prime numbers
- Perform mental calculations, including with mixed operations and large numbers
- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- 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
- Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- Solve problems involving addition, subtraction, multiplication and division
- Use their knowledge of the order of operations to carry out calculations involving the four operations

YEAR 6 – Number, Place Value, Four operations

Core knowledge to be acquired	Key Vocabulary (in addition to previous year group) :
- Read, write, order and compare numbers up to 10,000,000 - Determine the value of each digit in numbers up to 10,000,000 - Round any whole number to a required degree of accuracy - Use negative numbers in context, and calculate intervals across zero - Solve number problems and practical problems that involve previous points above - Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - Identify common factors, common multiples and prime numbers - Perform mental calculations, including with mixed operations and large numbers - Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	factorise, prime factor, digit sum/total.

▪ 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 ▪ Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context ▪ Solve problems involving addition, subtraction, multiplication and division ▪ Use their knowledge of the order of operations to carry out calculations involving the four operations	

Prior knowledge / skills this builds on:	**What comes next:**
▪ Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 ▪ Read, write, order and compare numbers to at least 1,000,000 ▪ Determine the value of each digit in numbers up to 1,000,000 ▪ Read Roman numerals to1000 (M) and recognise years written in Roman numerals ▪ Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 ▪ Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero ▪ Solve number problems and practical problems that involve previous points above ▪ Add and subtract numbers mentally with increasingly large numbers ▪ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ▪ Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy ▪ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why ▪ Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers ▪ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers ▪ Establish whether a number up to 100 is prime and recall prime numbers up to 19 ▪ Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) ▪ Multiply and divide numbers mentally drawing upon known facts ▪ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 ▪ Multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers ▪ Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context ▪ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes ▪ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign ▪ Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates	Key Stage 3 ▪ consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots ▪ select and use appropriate calculation strategies to solve increasingly complex problems ▪ use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships ▪ substitute values in expressions, rearrange and simplify expressions, and solve equations ▪ extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations ▪ develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ▪ begin to model situations mathematically and express the results using a range of formal mathematical representations