

Curriculum for Maths

Key Stage 1 Year 1 & Year 2

Number: Place value, Addition, Subtraction, Multiplication, Division, Fractions

Measurement: Length, Mass, Capacity, Time, Money, Standard units

Geometry: Properties of shape, Position, Direction, Motion, Statistics

Statistics: Graphs

Objectives for Number KS1 :Y1

AUTUMN TERM

- Count to and across to at least 50 –forwards and backwards beginning with 0 and 1 , or from any other given number
- Read and write numbers to 20 and beyond in numerals and write numbers in words to 20
- Count in 2s to 20 and beyond
- Count in 5s to beyond 20
- Count in 10s to 50
- Identify one more and less than a given number to beyond 20
- Order objects using the terms 1st , 2nd, 3rd, 4th, 5th and beyond
- Find the missing number in a sequence up to 10 and beyond
- Add/subtract 2 1-digit numbers to 10, including 0
- Read , write and interpret mathematical statements involving addition, subtraction and equals symbol
- Represent and use number bonds to 20
- Solve one step problems involving addition and subtraction
- Solve missing number problems

SPRING TERM

Count to and across to at least 50 –forwards and backwards beginning with 0 and 1 or from any other given number

- Count in 10s to 50 and beyond
- Count to and across to at least 50 –forwards and backwards beginning with 0 and 1 or from any other given number
- Read and write numbers to 50 and beyond in numerals and continue to write numbers in words to 20
- Count in 2s and 5s to 50 and beyond
- Count in 10s to 100
- Identify and represent numbers using objects and pictorial representations including a number line
- Identify one more and one less than a given number to 50 and beyond
- Order objects using the terms 1st , 2nd, 3rd to 10th
- Find the missing number in a sequence up to 20 and beyond
- Add/subtract 2-digit and 1-digit numbers to 10 and beyond
- Recognise and use inverse operations

SUMMER TERM

Count to and across to at least 100 and beyond forwards and backwards from any given number

- Read and write numbers to 100 in numerals and write numbers in words to 20
- Count to and across to at least 100 and beyond forwards and backwards beginning with 0 and 1 or from any given number
- Count in 2s, 5s and 10s to 100 and beyond
- Identify and write down the number which is one more and less than a given number to 100
- Find the missing number in a sequence up to 100
- Add/subtract 2-digit and 1-digit numbers to 20
- Double numbers up to 10
- Halve even numbers up to 20

Objectives for Number KS1 :Y2

AUTUMN TERM

- Count on/back in steps of 2s and 5s to 100 from 0; and in 10s to 100 and beyond from 0 and any given number
- Order a set of numbers (at least 3) to 50 in increasing value
- Recall fluently all addition number bonds to 10 and know all the subtraction number bonds to 10
- Find 1/10 more/less than a given number up to 30
- Recall the 2 times tables up to 2 , 5 and 10 times tables up to 12 x

- Count on/back in steps of 2s and 5s to 100, 3s to 30 from 0;
- Identify even and odd numbers to 20
- Read and write all numbers to 100 and beyond accurately in numerals and write all numbers in words to 30 and beyond
- Recall fluently all addition number bonds to 10 and beyond
- Add/subtract 2-digit and 1-digit numbers to 20 and beyond
- Recite the 2 times tables and answer any calculation involving the 2 times table in any order
- Recite the 10 times tables
- Double any number up to 30
- Halve any even 2-digit number up to 60

SPRING TERM

- Count on/back in steps of 2s and 5s to 100; 3s to 30 and beyond from 0; and in 10s to 100 and beyond from 0 and any given number
- Read and write all numbers to 100 and beyond in numerals and write all numbers in words to 50
- Order a set of numbers (at least 3) to 100 in increasing value
- Recall fluently all addition number bonds to 15 and beyond and know all the subtraction number bonds to 15
- Add/subtract : 2-digit and 1-digit numbers, a 2-digit number and ten and add 3 one digit numbers
- Recite the 2 and 10 times tables and answer any calculation involving the 2 and 10 times table in any order
- Halve any even 2-digit number up to 80
- Count on/back in steps of , 3s to 60 from 0;
- Count in $\frac{1}{2}$ s to 5
- Identify even and odd numbers to 50
- Write all numbers in words to 50 and beyond
- Order a set of numbers (at least 3) to 50 and beyond in decreasing value
- Compare numbers up to 50 using =, <, > symbols
- Round numbers to the nearest 10 up to at least 50
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20
- Find 1/10 more/less than a given number up to 50 and beyond
- Add/subtract 2-digit and 1-digit numbers to 20; a 2-digit number and tens
- Add/subtract: a 2-digit number and tens
- Recite the 5 times tables
- Double any number up to at least 40
- Solve one-step problems involving multiplication and division

SUMMER TERM

- Count on/back in steps of 2s and 5s to 100 and beyond, 3s to 60 from 0; and in 10s to 100 and beyond from 0 and any given number
- Count in 1p, 2p, 5p, 10p and £1

- Recognise the place value of a 2 digit number (tens and ones)
- Find 1/10 more/less than a given number up to 100
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20 to begin to become fluent in deriving facts (e.g. $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$)
- Add/subtract: 2-digit and 1-digit numbers, a 2-digit number and tens, two 2- digit numbers which do not involve bridging/exchanging across the 10s boundary and add 3 one digit numbers
- Recite the 2, 10 and 5 times tables and answer any calculation involving the 2, 10 and 5 times table in any order
- Double any number up to 50
- Count on/back in steps of 2s and 5s to 100 and beyond, 3s to 99 from 0; and in 10s to 100 and beyond from 0 and any given number
- Count in $\frac{1}{2}$ s to 10; in $\frac{1}{4}$ s to 5
- Read and write all numbers to 100 and beyond in numerals and write all numbers in words to 100 and over
- Order a set of numbers (4 and/or) to 100 in increasing and decreasing value
- Round numbers to the nearest 10 up to at least 100
- Compare numbers up to 100 using =, <, > symbols
- Begin to recognise the place value of a 3 digit number (hundreds, tens and ones)
- Find 1/10 more/less than a given number up to 100 and beyond
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20 to begin to become fluent in deriving facts (e.g. $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$)
- Add/subtract: 2-digit and 1-digit numbers, a 2-digit number and tens, two 2- digit numbers and add 3 one digit numbers
- Recite the 2, 10 and 5 times tables and answer any calculation involving the 2, 10 and 5 times table in any order
- Identify even and odd numbers to 100
- Halve any even 2-digit number up to 100
- Calculate mathematical statements for multiplication and division within 2, 5 and 10 times table
- Show that multiplication is commutative
- Solve problems involving multiplication and division

Objectives for KS1 (Y1 & Y2) Fractions

Year 1

- Recognise and name half as one of two equal parts
- Recognise and name quarter as one of four equal parts

Year 2

- Recognise, name and find fractions $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
- Write simple fractions: eg: $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$

Objectives for KS1 (Y1 & Y2) Measurement

Year 1

- Compare, describe and solve practical problems for:
 - Length and height (long/ short, longer/ shorter; tall/short; double/half)
 - Mass/ weight (heavy/ light, heavier than, lighter than)
 - Capacity and volume (full/ empty, more than, less than, half, half full, quarter)
 - Time (quicker, slower, earlier and later)

Measure and begin to record:

- Length and height
- Mass/ weight
- Capacity and volume
- Time (hours, minutes, seconds)
- Recognise and use language of dates: days of the week, weeks, months and years
- Tell the time to the hour and half past

Year 2

- Choose and use appropriate standard units to estimate and measure using rulers, scales, thermometers and measuring vessels,
 - Length/height (m, cm) in any direction
 - Mass (kg, g)
 - Temperature ($^{\circ}\text{C}$)
 - Capacity (l, ml) to the nearest appropriate unit
- Compare and order lengths, mass, volume/capacity and record results using $<$, $>$ and $=$
- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- Estimate and measure using appropriate standard units, using appropriate measuring vessels, rulers and scales:
 - Height/length (m, cm)
 - Mass (kg, g)
 - Temperature ($^{\circ}\text{C}$)

- Volume and capacity (l, ml)
- Tell and write the time to 5 minutes (including quarter to and past), knowing the number of minutes in an hour and hours in a day.
- Recognise coins and notes of different values and use symbols. (p, £)
- Combine amounts to make values and match combinations of coins to amounts of money
- Add and subtract money of the same unit
- Compare and sequence intervals of time.

Objectives for KS1 (Y1 & Y2) Geometry

Year 1

- Recognise and name 2-D shapes: to include: rectangle (including squares), circle and triangle
- Recognise and name 3-D shapes: to include cuboids (including cubes), pyramid and sphere
- Describe position, directions and movements including whole, half, quarter and three-quarter turns

Year 2

- Recognise and name common 2D and 3D shapes
- Identify and describe properties of 2D shapes, including the number of sides and line symmetry in a vertical line
- Identify and describe properties of polygons and non-polygons
- Compare and sort common shapes and everyday objects.
- Recognise and use language of dates: days of the week, weeks, months and years
- Order and arrange combinations of mathematical objects in patterns and sequences
- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

Objectives for KS1 (Y1 & Y2) Statistics

Year 2

- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- Ask and answer questions about totalling and comparing categorical data

Lower Key Stage 2 (Year 3 & Year 4)

Number: Place value, Addition, Subtraction, Multiplication, Division, Fractions

Measurement: Length, Mass, Capacity, Perimeter, Time

Geometry: Properties of shape, Angles, Co-ordinates, Position, Symmetry, Classifying

Statistics: Graphs

Objectives for Number Lower Key Stage 2 : Y3

AUTUMN TERM

- Count on/back in steps of 2s, 5s, 10s, 3s to 100 and beyond ,from 0 and any given number
- Count on/back in 4s from 0 to 100
- Count on/back in 50s and 100s from 0 to 1000
- Find 10/100 more or less than a given number up to 500
- Order a set of numbers (4 and/or 5) to at least 1000 in increasing and decreasing value
- Compare numbers up to 200 using =, <, > symbols
- Round numbers to the nearest 10 to at least 200
- Partition 3 digit numbers (hundreds, tens and ones)
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20 to begin to become fluent in deriving facts (e.g. $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$ and $300 + 700 = 1000$; $1000 - 700 = 300$ and $700 = 1000 - 300$)
- Add/subtract: 2-digit and 1-digit numbers, a 2-digit number and tens, two 2- digit numbers and add 3 one digit numbers
- Recall the 2, 5 and 10 times tables and the derived division facts and begin to learn the 4 and 3 times tables
- Double any number
- Count on/back in multiples of 4 and 8 from 0

- Count on/back in tenths
- Read and write all numbers to 1000 in numerals and write all numbers in words to 400 and over
- Round numbers to the nearest 10 to at least 500 and to the nearest 100 to 500
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds
- Count on/back in $\frac{1}{2}$ s , $\frac{1}{4}$ s and $\frac{1}{3}$ s including on a number line
- Recall the 2, 3, 4, 5 and 10 times tables and the derived division facts
- Identify, represent and estimate numbers using different representations

SPRING TERM

- Count on/back in steps of 2s,5s, 10s, 3s to 100 and beyond, from 0 and any given number
- Count on/back in multiples of 4 and 8 from 0
- Count on/back in 50s, 100s from 0 to 1000
- Find 10/100 more or less than a given number up to 500 and more
- Read and write all numbers to 1000 in numerals and write all numbers in words to 500
- Order a set of numbers (4 and/or 5) to at least 1000 in increasing and decreasing value
- Compare numbers up to 500 using =, <, > symbols
- Round numbers to the nearest 10 to at least 1000 and to the nearest 100 to 1000
- Recognise the place value of each digit (hundreds, tens and ones)
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20 to begin to become fluent in deriving facts (e.g. $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$ and $300 + 700 = 1000$; $1000 - 700 = 300$ and $700 = 1000 - 300$)
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds
- Recall the 2, 3, 4, 5, 8 and 10 times tables and the derived division facts
- Double any number up to 100; double any multiple of 50 up to 500 and halve any number up to 100
- Find complements to 100 and recall addition and subtraction facts for 100 (e.g. $37 + 63 = 100$, $63 + 37 = 100$, $100 - 37 = 63$, $100 - 63 = 37$)
- Read and write all numbers to 1000 in numerals and write all numbers in words to 500 and over
- Partition 3 digit numbers (hundreds, tens and ones) and partition numbers in different ways
- Count on/back in $\frac{1}{2}$ s , $\frac{1}{4}$ s and $\frac{1}{3}$ s including on a number line
- Estimate the answer to a calculation and use inverse operations to check answers
-

SUMMER TERM

- Count on/back in steps of 1s, 10s, or 100 from any 2/3 digit numbers
- Count on/back in 50s, 100s from 0 to 1000
- Find 10/100 more or less than a given number up to 1000

- Read and write all numbers to 1000 in numerals and write all numbers in words to at least 1000
- Order a set of numbers (4 and/or 5) to at least 1000 in increasing and decreasing value
- Compare numbers up to 1000 using =, <, > symbols
- Round numbers to the nearest 10 to 1000 and beyond and to the nearest 100 to 1000 and beyond
- Partition 3 digit numbers (hundreds, tens and ones) and partition numbers in different ways
- Count in tenths, read and write numbers with 1 decimal place and compare numbers with one decimal place
- Recall fluently all addition number bonds to 20 and know all the subtraction number bonds to 20 to begin to become fluent in deriving facts (e.g. $3 + 7 = 10$; $10 - 7 = 3$ and $7 = 10 - 3$ to calculate $30 + 70 = 100$; $100 - 70 = 30$ and $70 = 100 - 30$ and $300 + 700 = 1000$; $1000 - 700 = 300$ and $700 = 1000 - 300$)
- Find complements to 100 and recall addition and subtraction facts for 100 (e.g. $37 + 63 = 100$, $63 + 37 = 100$, $100 - 37 = 63$, $100 - 63 = 37$)
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds
- Recall the 2, 3, 4, 5, 8 and 10 times tables and the derived division facts
- Double any number up to 100; double any multiple of 50 up to 500 and halve any number up to 200
- Count on/back in steps of 2s,5s, 10s, 3s to 100 and beyond, from 0 and any given number
- Count on/back in multiples of 4 and 8 from 0
- Find 10/100 more or less than a given number up to 1000 and more
- Order a set of numbers (4 and/or 5) to 1000 and beyond in increasing and decreasing value
- Begin to partition 4 digit numbers (thousands, hundreds, tens and ones)
- Count on/back in $\frac{1}{2}$ s , $\frac{1}{4}$ s , $\frac{1}{3}$ s and $\frac{1}{10}$ s including on a number line

Objectives for Number Lower Key Stage 2 : Y4

AUTUMN

- Count on/back in steps of 2s, 3s, 4s 5s, 8s, 10s, 6s and 9s (through zero to include negative numbers)
- Recall the 2, 3, 4, 5, 8 and 10 times tables and the derived division facts
- Count on/back in multiples of 6 and 9 from 0
- Count on/back in 25s, 50s, 100s from 0 to 5000 and in 1000s from 0 to 10,000 and beyond

- Find 10/100/1000 more or less than a given number beyond 1000
- Read and write all numbers to at least 10,000 in both numerals and words
- Partition 4 digit numbers (thousands, hundreds, tens and ones)
- Partition in different ways
- Order a set of numbers (4 and/or 5) to 10,000 and beyond in increasing and decreasing value
- Compare numbers up to 10,000 and beyond using =, <, > symbols
- Round numbers up to 10,000 to the nearest 10, 100 or 1000
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds, combinations of 2 and 3 digit numbers
- Find complements to 100 and to 1000 and recall addition and subtraction facts for 100 and 1000 (e.g. $37 + 63 = 100$, $63 + 37 = 100$, $100 - 37 = 63$, $100 - 63 = 37$, $530 + 470 = 1000$)
- Double any number up to 100; double
- Count on/back in steps of 2s, 3s, 4s 5s, 8s, 10s
- Recall the 2, 3, 4, 5, 6, 8 and 10 times tables and the derived division facts

SPRING

- Count on/back in steps of 2s, 3s, 4s 5s, 8s, 10s, 6s, 9s
- Recall the 2, 3, 4, 5, 6, 8, 9 and 10 times tables and the derived division facts
- Count on/back in multiples of 7 from 0
- Count on/back in 25s, 50s, 100s from 0 to 10,000 and in 1000s from 0 to 10,000 and beyond
- Find 10/100/1000 more or less than a given number beyond 5000
- Read and write all numbers to at least 10,000 in both numerals and words
- Partition 4 digit numbers (thousands, hundreds, tens and ones) Partition in different ways
- Order a set of numbers (4 and/or 5) to 50,000 and beyond in increasing and decreasing value
- Compare numbers up to 50,000 and beyond using =, <, > symbols
- Round numbers up to and beyond 10,000 to the nearest 10, 100 or 1000
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds, combinations of 2 and 3 digit numbers
- Find complements to 100 and to 1000 and recall addition and subtraction facts for 100 and 1000 (e.g. $37 + 63 = 100$, $63 + 37 = 100$, $100 - 37 = 63$, $100 - 63 = 37$, $530 + 470 = 1000$)
- Count in tenths, hundredths, read and write numbers with up to 2 decimal places and compare numbers with the same number of decimal places up to 2 decimal places
- Count on/back in $\frac{1}{2}$ s , $\frac{1}{4}$ s , $\frac{1}{3}$ s , $\frac{1}{10}$ s and other unit fractions including on a number line

SUMMER

- Count on/back in steps of 2s, 3s, 4s 5s, 8s, 10s, 6s, 9s, 7s
 - Recall the 2, 3, 4, 5, 6, 7, 8, 9 and 10 times tables and the derived division facts
 - Multiply and divide numbers mentally using place value and known facts including multiplying by 1 and 0 and dividing by 1
 - Count on/back in 25s, 50s, and 100s from 0 to 10,000 and in 1000s from 0 to 10,000 and beyond
 - Count in tenths, hundredths, read and write numbers with up to 2 decimal places and compare numbers with the same number of decimal places up to 2 decimal places
 - Find 10/100/1000 more or less than a given number up to 10,000
 - Read and write all numbers to at least 10,000 in both numerals and words
 - Partition 4 and begin to partition 5 digit numbers (thousands, hundreds, tens and ones) Partition in different ways
 - Order a set of numbers (4 and/or 5) up to 100,000 in increasing and decreasing value
 - Compare numbers up to 100,000 using =, <, > symbols
 - Round numbers up to 50,000 to the nearest 10, 100 or 1000
 - Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds, combinations of 2 and 3 digit numbers
 - Find complements to 100 and to 1000 and recall addition and subtraction facts for 100 and 1000 (e.g. $37 + 63 = 100$, $63 + 37 = 100$, $100 - 37 = 63$, $100 - 63 = 37$, $530 + 470 = 1000$)
 - Count on/back in steps of 11 and 12
 - Recall the 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 times tables and the derived division facts
 - Multiply together three numbers by using place value and known facts
 - Compare numbers up to 100,000 and beyond using =, <, > symbols
 - Round numbers up to and beyond 100,000 to the nearest 10, 100 or 1000
 - Count on/back in $\frac{1}{2}$ s, $\frac{1}{4}$ s, $\frac{1}{3}$ s, $\frac{1}{10}$ s and other unit fractions including on a number line
 - Add and subtract numbers with up to 3 digits using formal written methods of columnar addition and subtraction
 -
- Solve problems including missing number problems for all 4 operations.

Objectives for Lower Key Stage 2 (Y3 & Y4) Multiplication and Division

Year 3

- 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 known tables, including for 2-digit numbers multiplied by one digit numbers, using mental methods and progressing to formal written methods.
- Solve number problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Year 4

- Recall multiplication and division facts for 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 a 2-digit and 3-digit numbers by using a one digit number using formal written layout
- Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by a 1-digit number; integer scaling problems and correspondence problems such as n objects are connected to m objects

Objectives for Lower Key Stage 2 (Y3 & Y4) Fractions

Year 3

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing single digit numbers or quantities by 10
- Recognise, find and write fractions of a discrete set of objects; unit fractions and non-unit fractions with small denominators
- Recognise and use fractions as numbers; unit fractions and non-unit fractions with small denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole
- Compare and order unit fractions, and fractions with the same denominators
- Problem solve involving all of the above objectives

Year 4

- Recognise and show, using diagrams, families of common equivalent fractions
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- Add and subtract fractions with the same denominator
- Recognise and write decimal equivalents of any number of tenths or hundredths

- Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- Find the effect of dividing a One- or two digit number by 10 and 100 , identifying the value of the digits in the answer as ones, tenths and hundredths
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with the same number of decimal places up to two decimal places
- Solve simple measure and money problems involving fractions and decimals to two decimal places

Objectives for Lower Key Stage 2 (Y3 & Y4) Measurement

Year 3

- Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg, g); volume and capacity (l/ ml) •
- Measure the perimeter of simple 2D shapes
- Add and subtract amounts of money to give change, using both £ and p in practical contexts
- Estimate and read time with increasing accuracy to the nearest minute
- Tell and write the time from an analogue clock, using Roman numerals 1 to XII, and 12 hour & 24 hour clocks
- Record and compare time in terms of seconds, minutes, hours
- Use vocabulary such as: o'clock, am, pm, morning, afternoon, noon and midnight
- Know the number of seconds in a minute; minutes in an hour; and the number of days in each month, year and leap year
- Compare durations of events, eg. calculate time taken by particular events or tasks

Year 4

- Convert between different units of measure e.g. km to m; m to cm; cm to mm; kg to g; l to ml; hour to min; min to sec; year to month; week to days
- Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- Find area of rectilinear shapes by counting squares
- Estimate, compare and calculate different measures, including money in pounds and pence
- Read, write and convert time between analogue and digital 12- and 24- hour clocks
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days

Objectives for Lower Key Stage 2 (Y3 & Y4) Geometry

Year 3

- Draw 2D shapes and make 3D shapes using modelling materials
- Recognise 3D shapes in different orientations and describe them
- Recognise angles as a property of shape or a description of a turn
- Identify right angles; know that 2 and 4 right angles make half and a full turn respectively
- Identify whether angles are greater or less than a right angle
- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.

Year 4

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify acute and obtuse angles and compare and order angles up to two right angles by size
- Identify lines of symmetry in 2D shapes presented in different orientations
- Complete a simple symmetric figure with respect to a specific line of symmetry
- Describe positions on a 2-D grid as coordinates in the first quadrant
- Describe movements between positions as translations of a given unit to the left/right and up/down
- Plot specified points and draw sides to complete a given polygon

Objectives for Lower Key Stage 2 (Y3 & Y4) Statistics

Year 3

- Interpret and present data using bar charts, pictograms and tables
- Solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables

Year 4

- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Upper Key Stage 2 (Year 5 & Year 6)
Number: Place value, Addition, Subtraction, Multiplication, Division, Fractions including decimals and percentages, Decimals, Percentages, Ratio and Proportion, Algebra
Measurement: Length, Mass, Capacity, Scaling, Imperial units, Perimeter, Time
Geometry: Properties of shape, Angles , Reflection, Translation, Co-ordinates
Statistics: Graphs

Objectives for Number Upper Key Stage 2 : Y5

AUTUMN

- Count on/back from a given number in steps of 100/1000/10,000 up to a 100,000
- Find powers of 10 more than a given number
- Multiply and divide numbers mentally drawing upon known facts
- Multiply and divide any whole number by 10 and 100 and multiply and divide any decimal number by 10
- Count on/back with positive and negative numbers, including through zero
- Add/subtract: 3-digit and 1-digit numbers, a 3-digit number and tens and a 3-digit number and hundreds, combinations of 2 and 3 digit numbers
- Find complements to 100 and 1000 and 10. 000
- Find factors and factor pairs of each number up to 20
- Read, write and order numbers to 100,000 and beyond
- Compare numbers to 100,000 and beyond
- Partition numbers to 100,000 and beyond
- Read, write, order and compare decimal numbers up to 2dp
- Partition decimal numbers to 2dp
- Round decimals with 1dp to the nearest whole number
- Multiply and divide any whole number by 10 and 100 and multiply and divide any decimal number by 10 and 100
- Count on/back in fraction and decimal sequences (e.g. 2.5 or $1 \frac{1}{2}$)
- Round any number up to 100,000 to the nearest 10, 100 and 1000
- Add/subtract: 4-digit and 1-digit numbers, a 4 digit and tens, a 4-digit number and hundreds and a 4-digit number and thousands and combinations of pairs of 2,3 or 4 digit numbers
- Find factors and factor pairs of each number up to and beyond 20
- Convert units of measurement (km and m; cm and m; cm and mm; gram and km, ml and L)
- Interpret negative numbers in context , count forwards and backwards with positive and negative whole numbers, including through zero
- Solve number problems and practical problems
- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals

SPRING

- Count on back from a given number in steps of 100/1000/10,000/100.000 up to 500,000
- Find powers of 10 more than a given number
- Read, write, order and compare decimal numbers up to 3dp
- Partition decimal numbers to 3dp

- Round decimals with 1 and 2dp to the nearest whole number
- Multiply and divide numbers mentally drawing upon known facts
- Multiply and divide any whole number by 10, 100, 1000 and multiply and divide any decimal number by 10 and 100
- Count on/back with positive and negative numbers, including through zero
- Count on/back in fraction and decimal sequences? (e.g. 2.5 or $1\frac{1}{2}$)
- Round any number up to 500,000 to the nearest 10, 100, 1000, 10,000 and 100,000
- Add/subtract: 4-digit and 1-digit numbers, a 4 digit and tens, a 4-digit number and hundreds and a 4-digit number and thousands and combinations of pairs of 2,3 or 4 digit numbers using formal written methods (columnar addition and subtraction)
- Mentally add and subtract tenths
- Find factors and factor pairs of each number up to 50
- Find complements to 100 and 1000 and to £1.00
- Convert units of measurement (km and m; cm and m; cm and mm; gram and kg, ml and L)
- Read, write and order numbers to 500,000 and beyond
- Compare numbers to 500,000 and beyond
- Partition numbers to 500,000 and beyond
- Add mentally a 4 digit number and a 3 digit number (for example $8,345 + 230$)
- Subtract mentally any 4-digit number from a 3-digit number (for example $8,345 - 230$)
- Find factors and factor pairs of each number up to 50 and beyond
- Find complements to 100 and 1000; £1.00 and £5.00 and to 1 using 2dp
- Mentally add and subtract tenths
- Use rounding to check answers to calculations
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

SUMMER

- Count on/back from a given number in steps of 100/1000/10,000/100,000 up to a 1,000,000
- Read, write and order numbers to 1,000,000
- Compare numbers to at least 1,000,000
- Partition numbers to at least 1,000,000
- Find powers of 10 more than a given number
- Read, write, partition, order and compare decimal numbers up to 3dp
- Round decimals with 1 and 2dp to the nearest whole number and to 1dp
- Multiply and divide numbers mentally drawing upon known facts
- Multiply and divide any whole and decimal number by 10, 100, 1000
- Count on/back with positive and negative numbers, including through zero
- Count on/back in fraction and decimal sequences (e.g. 2.5 or $1\frac{1}{2}$)

- Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000
- Add mentally a 4 digit number and 3 digit numbers (for example $8,345 + 230$)
- Subtract mentally any 4-digit number from a 3-digit number (e.g. $8,345 - 230$)
- Mentally add and subtract tenths and one-digit whole numbers and tenths
- Find factors and factor pairs of each number up to 100
- Find complements to 100 and 1000; £1.00 and £5.00 and to 1 using 2dp
- Convert units of measurement
(km and m; cm and m; cm and mm; gram and kg, ml and L)
- Count on/back from a given number in steps of 100/1000/10,000/100,000 to a 1,000,000 and beyond
- Read, write, and order numbers to 1,000,000 and beyond
- Add mentally a 5-digit number and 4- digit numbers (e.g. $15,345 + 2300$)
- Mentally add and subtract tenths and one-digit whole numbers and tenths
- Find complements to 100, 1000, 10,000; £1.00, £5.00 and £10.00; and to 1 using 3dp

Objectives for Number Upper Key Stage 2 : Y6

AUTUMN

- Count on/back from a given number in steps of 10/100/1000/10000 up to at least 1,000,000
- Count on/back in whole numbers, fraction and decimal sequences through zero to include negative numbers (e.g. 2.5 or $1 \frac{1}{4}$)
- Find 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number
- Read, write, partition, order and compare numbers to at least 1,000,000
- Round any number to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 (e.g. round 5 digit number to the nearest 10,000)
- Order and compare numbers including integers, decimals and negative numbers
- Read, write, order, partition and compare decimal numbers up to 3dp
- Round decimals with 1 and 2dp to the nearest whole number and to 1dp
- Multiply and divide mentally drawing upon known facts and/or using place value
- Multiply and divide any whole and decimal number by 10, 100 and 1000 giving answers up to 2dp
- Mentally add and subtract tenths and one-digit whole numbers and tenths
- Add/subtract mentally a 5-digit number and 4- digit numbers (e.g. $15,345 + 2300$ and $12,462 - 2300$)
- Count on/back with positive and negative numbers, including through zero
- Count on/back in fraction and decimal sequences

- Find factors and factor pairs of each number to 100
- Find complements to 100. 1000 ,10,000 and to £1.00, £5.00 and £10.00
- Count on/back from a given number in steps of 10/100/1000/10000 to 1,000,000 and beyond
- Read, write, partition, order and compare numbers to 1,000,000 and beyond?
- Round any number to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 (e.g. round 5 digit number to the nearest 10.000; 6 digit number to the nearest 100,000)
- Round decimals with 3dp to the nearest whole number or to one or two decimal places
- Multiply and divide drawing upon known facts and/or using place value
- Mentally add and subtract tenths and one-digit whole numbers and tenths
- Continue a linear number sequence with positive and negative numbers, decimal and proper fractions including through zero
- Convert units of measurement
(km and m; cm and m; cm and mm; gram and km, ml and l and time)
- Find complements to 100, 1000 ,10,000 and to £5.00, £10.00 and £20.00

SPRING

- Count on/back from a given number in steps of 10/100/1000/10000 to 1,000,000 and beyond
- Count on/back in whole numbers, fraction and decimal sequences through zero to include negative numbers (e.g. 2.5 or $1\frac{1}{4}$)
- Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number
- Read, write, partition, order and compare numbers to 5,000,000
- Round any number to 5,000,000 and beyond to the nearest 10, 100, 1000, 10,000 and 100,000 (e.g. round any 6 digit number to the nearest hundred thousand and 7-digit number to the nearest million)
- Order and compare numbers including integers, decimals and negative numbers
- Read, write, order, partition and compare decimal numbers up to 3dp
- Round decimals with 3dp to the nearest whole number or to one or two decimal places
- Multiply and divide drawing upon known facts and/or using place value
- Multiply and divide any whole and decimal number by 10, 100 and 1000 giving answers up to 3dp
- Add/subtract mentally a 5-digit number and 4-digit numbers (e.g. $15,345 + 2300$ and $12,462 - 2300$)
- Mentally add and subtract tenths and 1-digit whole numbers and tenths
- Perform mental calculations with larger numbers and mental calculations which include at least 2 different operations (e.g. addition and multiplication)
- Continue a linear number sequence with positive and negative numbers, decimal and proper fractions including through zero
- Find factors and factor pairs of each number to 100
- Convert units of measurement (km and m; cm and m; cm and mm; gram and km, ml and L and time)
- Find complements to 100. 1000 ,10,000 and to £5.00, £10.00 and £20.00
- Read, write, partition, order and compare numbers to 5,000,000 and beyond

- Convert units of measurement using decimal notation up to 3dp(km and m; cm and m; cm and mm; gram and km, ml and l and time)
- Find complements to 1000, 10,000 and to £10.00, £20.00 and £50

SUMMER

- Count on/back from a given number in steps of 10/100/1000/10000 to 1,000,000 and beyond
- Count on/back in whole numbers, fraction and decimal sequences through zero to include negative numbers (e.g. 2.5 or $1\frac{1}{4}$)
- Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number
- Read, write, partition, order and compare numbers to 10,000,000
- Round any 6 digit number to the nearest hundred thousand and 7-digit number to the nearest million.
- Round any number to 10,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000 (e.g. round any 6 digit number to the nearest hundred thousand and 7-digit number to the nearest million)
- Order and compare numbers including integers, decimals and negative numbers
- Read, write, order, partition and compare decimal numbers up to 3dp
- Round decimals with 3dp to the nearest whole number or to one or two decimal places
- Multiply and divide any whole and decimal number by 10, 100 and 1000 giving answers up to 3dp
- Perform mental calculations with larger numbers and mental calculations which include at least 2 different operations (e.g. addition and multiplication)
- Continue a linear number sequence with positive and negative numbers, decimal and proper fractions including through zero
- Find factors and factor pairs of each number to 100
- Convert units of measurement using decimal notation up to 3dp (km and m; cm and m; cm and mm; gram and km, ml and L and time)
- Find complements to 1000, 10,000 and to £10.00, £20.00 £50 and £100

Objectives for Upper Key Stage 2 (Y5 & Y6) Multiplication and Division

Year 5

- 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
- 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
- Multiply and divide numbers mentally drawing upon known facts
- 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
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
- 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.

Year 6

- 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

- Perform mental calculations, including with mixed operations and large numbers
- Identify common factors, common multiples and prime numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition, subtraction, multiplication and division
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Objectives for Upper Key Stage 2 (Y5 & Y6) Fractions

Year 5

- Compare and order fractions whose denominators are all multiples of the same number
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with two decimal places to the nearest whole number and to one decimal place

- Read, write, order and compare numbers with up to three decimal places
- Solve problems involving number up to three decimal places
- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

Year 6

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Compare and order fractions, including fractions > 1
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
- Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]
- Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]
- Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- Multiply one-digit numbers with up to two decimal places by whole numbers
- 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 degrees of accuracy
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Objectives for Upper Key Stage 2 (Y5 & Y6) Measurement

Year 5

- Convert between different units of metric measure, eg. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre
 - Understand and use approximate equivalences between metric and common imperial units such as inches, pounds and pints
 - Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
 - Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
 - Estimate volume, eg. Using 1cm^3 blocks to build cuboids (including cubes) and capacity, eg. using water
 - Solve problems involving converting between units of time
-
- Use all four operations to solve problems involving measure (eg. length, mass, volume, money) using decimal notation, including scaling

Year 6

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- Convert between miles and kilometres
- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volume of cubes and cuboids using standard units.

Objectives for Upper Key Stage 2 (Y5 & Y6) Geometry

Year 5

- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- Estimate and compare acute, obtuse and reflex angles
- Know angles are measured in degrees and identify right angles as $\frac{1}{4}$ turn (total 90°); straight line as half turn = 180° ; whole turn = 360°
- Recognise and compare different triangles, including isosceles, equilateral and right angles triangles
- Identify and name parallelogram; rhombus and trapezium
- Draw given angles, and measure them in degrees ($^\circ$)
- Identify angles at a point and one whole turn (total 360°)
- Identify angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- Use the properties of rectangles to deduce related facts and find missing lengths and angles
- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed

Year 6

- Draw 2-D shapes using given dimensions and angles
- Compare and classify geometrical shapes based on properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- Recognise, describe and build simple 3D shapes, including making nets
- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
- Describe properties of common 3D shapes and identify parallel planes and symmetry
- Estimate size of angles
- Describe positions on the full coordinate grid (all four quadrants)
- Draw and translate simple shapes on the coordinate plane and reflect them in the axes

Objectives for Upper Key Stage 2 (Y5 & Y6) Statistics

Year 5

- Solve comparison, sum and difference problems using information presented in a line graph
- Complete, read and interpret information in tables, including timetables

Year 6

- Interpret and construct pie charts and line graphs and use these to solve problems
- Calculate and interpret the mean as average

Objectives for Upper Key Stage 2 (Y5 & Y6) Ratio and proportion

Year 6

- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.
- Solve problems involving the calculation of percentages.
- Solve problems involving similar shapes where the scale factor is known or can be found.
- Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Objectives for Upper Key Stage 2 (Y5 & Y6) Algebra

Year 6

- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically
- Find pairs of numbers that satisfy an equation with two unknowns
- Enumerate possibilities of combinations of two variables.

