MATHEMATICS CURRICULUM OVERVIEW KS1

YEAR 1

Number and Place Value
Count to and across, forwards and backwards, 100 from any number
Count, read and write numbers to 100 in numerals
Count in multiples of 2, 5 and 10
Read and write in numerals and words numbers from 1-20
Read and write mathematical symbols: +, - and =
Identify "one more" and "one less"
Identify and show numbers using objects and pictures

Calculation
Use number bonds and subtraction facts within 20
Add and subtract 1-digit and 2-digit numbers to 20, including zero
Solve + - x and ÷ problems using objects and pictures
Read, write and use statements with + , - and = signs

Fractions (including decimals and percentages)
Recognise, find and name a half
Recognise, find and name a quarter

Measurement

Measure and begin to record length, mass, volume and time
Recognise and know the value of all coins and notes
Use language to sequence events in chronological order
Recognise and use language relating to dates
Tell the time to the half-hour, including drawing clocks
Solve practical problems involving length, mass, volume and time

Geometry
Recognise and name common 2-D shapes
Recognise and name common 3-D shapes
Describe whole, half, quarter and three -quarter turns

YEAR 2

Number and Place Value
Count in steps of 2s, 3s and 5s, and steps of 10
Use number lines
Recognise place value in two-digit numbers
Compare and order numbers up to 100 using <, > and =
Read and write numbers to 100 in numerals and words
Use place value and number facts to solve problems

Calculation
Recall/ use addition/subtraction facts to 20, and derive related facts
Add and subtract mentally and with objects one- and two-digit numbers
Understand/use the inverse relationship between addition and subtraction
Know 2×, 5× and 10× tables, including recognising odd & even numbers
Calculate mathematical statements using x and ÷ symbols
Know that + and x can be done in any order and that - and ÷ cannot.
Solve + - x and ÷ problems using objects and pictures
Begin to use written methods for + and -

Fractions (including decimals and percentages)
Recognise, find, name and write 1/3, 1/4, 1/2 and 3/4 of size, shape or quantity
Write simple fraction facts, e.g. 1/2 of 6 = 3

Measurement
Choose and use appropriate units to measurement
Compare and order measures
Combine amounts of money to make a value, including using £ and p symbols
Tell the time to the nearest 5 minutes, including drawing clocks
Compare and sequence times
Know the number of minutes in a hour and hours in a day
Solve money problems in a practical context

Geometry
Describe properties of 2-D shapes, including number of sides and symmetry
Describe properties of 3-D shapes, including number of edges, vertices and faces
Name 2D shapes on the surface of 3D shapes
Compare and sort shapes
Arrange patterns
Use mathematical vocabulary to describe position (clockwise, anti clockwise, quarter, half and three quarter turn)

Statistics
Interpret and construct simple tables, tally charts and pictograms
Ask and answer questions about data

MATHEMATICS CURRICULUM OVERVIEW KS2

YEAR 3

Number and Place Value
Count backwards through zero, including negative numbers
Recognise place value in 3 digit numbers
Find 10 or 100 more/less
Count in multiples of 4, 8, 50 and 100
Compare, order, read and write numbers up to 1000
Solve number problems

Calculation
Add and subtract numbers mentally,
Add and subtract using standard column method
Estimate answers to calculations and use the inverse to check answers
Solve missing number problems
Know 3×, 4× and 8× tables
Use facts that they know to times 2 digit numbers by 1 digit, progressing to short multiplication

Fractions (including decimals and percentages)
Count up and down in tenths
Compare and order simple fractions
Recognise and show equivalent fractions
Find and write fractions of a set of objects
Add and subtract fractions with common denominators
Solve problems that involve fractions
Use fractions as numbers

Measurement
Measure, compare and calculate measures using standard units, including time
Measure the perimeter of simple 2-D shapes
Add and subtract money, including giving change
Tell and write the time from an analogue clock, including using Roman numerals
Estimate and read time to the nearest minute
Know the number of seconds in a minute, days in each month, year and leap year

Geometry
Draw and describe 2D shapes
Make and describe 3D shapes
Recognise angles in turns and shapes
Identify horizontal, vertical, parallel and perpendicular lines
Identify whether angles are greater or less than a right angle

Statistics
Interpret, solve problems and present data using bar charts, pictograms and tables

YEAR 4

Number and Place Value
Count backwards through zero, including negative numbers
Recognise place value in four-digit numbers
Round any number to the nearest 10, 100 or 1000
Count in multiples of 6,7,9,25, 1000
Order and compare numbers beyond 1000
Find 1000 more/less
Solve number and practical problems
Roman numerals to 100

Calculation
Know tables up to 12 × 12
Use place value and number facts to carry out mental calculations
Use factor pairs and commutativity in mental calculations
Use short multiplication method
Written methods up to 4 digits (= and -)
Use inverse and estimation to check answers
Solve 2 step problems

Fractions (including decimals and percentages)
Recognise and use hundredths
Show equivalent fractions decimal equivalents
Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ & $\frac{3}{4}$
Divide one- or two-digit numbers by 10 and 100, using tenths and hundredths
Round decimals with one decimal place to the nearest whole number
Compare numbers up to two decimal places
Solve fraction and decimal problems
Add and subtract fractions

Measurement
Convert between different units of metric measurement, including money and time
Calculate the perimeter and find the area of rectilinear shapes by counting squares
Solve problems converting units of time and measure, including decimals
Calculate and compare different measures
Convert between analogue and digital 12 and 24 hour clocks.

Geometry
Compare and classify shapes, including quadrilaterals and triangles
Identify and compare acute and obtuse angles
Identify lines f symmetry and complete a simple symmetric figure
Describe positions on a 2-D grid using co-ordinates and plot points
Describe translations

Statistics
Interpret and present discrete and continuous data on appropriate graphs
Solve problems presented in bar charts, pictograms, tables and other graphs.

YEAR 5

Number and Place Value
Secure place value, counting and rounding of numbers up to 1 000 000
Interpret negative numbers in context
Read Roman numerals to 1000, including years
Use number and place value knowledge to solve problems

Calculation
Recognise and use square and cube numbers, and know the notation
Use rounding to check answers and determine accuracy
Identify multiples and factors, including finding factor pairs and common factors
Use vocabulary: prime numbers, prime factors and composite numbers
Know prime numbers up to 19
Multiply and divide numbers by 10, 100 or 1000, including decimals
Written and mental methods for all operations
Solve multi step problems

Fractions (including decimals and percentages)
Recognise and convert between mixed numbers and improper fractions
Compare and order fractions whose denominators are multiples of the same number
Identify, name and write equivalent fractions including tenths and hundredths
Add and subtract fractions with denominators that are multiples of the same number
Multiply proper fractions and mixed numbers by whole numbers with support
Read and write decimal numbers as fractions
Round decimals with 2 decimals places to whole number or to one decimal place
Read, write, order and compare numbers with up to 3 decimal places , including solving problems
Recognise % symbol and explain as a fraction with denominator 100 (parts out of 100)
Recognise and use thousandths
Solve fraction, decimal and percentage problems

Statistics
Complete, read and interpret information in tables, including timetables
Solve line graph problems

Measurement
Convert between different metric units and units of time
Understand and use common approximate conversions between metric and imperial
Measure and calculate the perimeter of composite rectilinear shapes
Calculate the area of rectangles, and estimate the area of irregular shapes
Estimate volume
Use all operations to solve measure problems

Geometry
Distinguish between regular and irregular polygons
Identify 3-d shapes from 2-d representations
Know angles are measured in degrees and compare acute, obtuse and reflex angles
Draw and measure angles to the nearest degree
Identify angles at a point, in a turn and on a straight line
Describe and represent the result of a reflection or translation
Use the properties of rectangles to find missing lengths and angles

YEAR 6

Number and Place Value
Secure place value and rounding of numbers up to 10 000 000 and decimals with 3 places
Multiply and divide by 10, 100, 1000
Use negative numbers to calculate across 0

Calculation
Mental calculation for all operations
Order of operations (BODMAS)
Solving multi step problems
Using estimation to check answers
Written methods for all operations, including decimals
Common factors, multiples and prime numbers

Fractions (including decimals and percentages)
Written methods that include decimals
Use common factors to simplify fractions
Compare and order fractions
Add and subtract fractions with different denominators and mixed numbers
Multiply and divide fractions
Calculate decimal fraction equivalents for simple fractions
Recall and use equivalence between fractions, decimals and percentages

Ratio and Proportion
Solve ratio and proportion problems
Solve similar shape problems when the scale is known
Calculate and solve problems with percentages

Algebra
Use simple formulae
Linear number sequences
Missing number problems
Solve problems with unknowns

Measurement
Confidently use a range of measures, including converting between units
Convert between miles and km
Solve measure problems which include rounding
Calculate area and perimeter of triangles and parallelograms
Use formulae for area and volume of shapes

Statistics
Pie charts
Calculate the mean average

Geometry
Draw 2D shapes with given dimensions and angles
Classify shapes by properties
Recognise and build 3D shapes
Find missing angles in triangles, quadrilaterals and regular polygons
Recognise vertically opposite angles and calculate unknown angles
Describe positions and translate shapes on a full co-ordinate grid
Illustrate and name parts of a circle