

Maths Curriculum Intention 2024-2025			
EYFS	KS1 & KS2		
<p>The EYFS framework is organised across seven areas of learning which includes mathematics. Mathematics in EYFS involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures. The table below outlines the most relevant early years outcomes from age 3-4 to ELG, brought together from the Number and the Shape Space and Measures section of the Early Years Foundation Stage.</p> <p>EYFS Framework 2021 Mathematics Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.</p>	<p>The national curriculum for mathematics aims to ensure that all pupils:</p> <ul style="list-style-type: none"> <li>become <b>fluent</b> in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.</li> <li><b>reason</b> mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language</li> <li>can <b>solve problems</b> by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.</li> </ul> <p>Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.</p> <p>The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.</p>		
	KS1	LKS2	UKS2
	<p>The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].</p> <p>At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.</p> <p>By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.</p> <p>Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.</p>	<p>The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.</p> <p>At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.</p> <p>By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.</p> <p>Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.</p>	<p>The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.</p> <p>At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.</p> <p>By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.</p> <p>Pupils should read, spell and pronounce mathematical vocabulary correctly</p>

# Maths Curriculum Implementation

## EYFS

### Development Matters

#### **3-4 Year Olds**

Develop 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'.

Understand position through words alone – for example, "The bag is under the table," – with no pointing.

Describe a familiar route.

Discuss routes and locations, using words like 'in front of' and 'behind'

Make comparisons between objects relating to size, length, weight and capacity

Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc.

Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.

Extend and create ABAB patterns – stick, leaf, stick, leaf.

Notice and correct an error in a repeating pattern.

Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

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 0–5 and some to 10.

Select, rotate and manipulate shapes to develop spatial reasoning skills.

Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.

Continue, copy and create repeating patterns.

Compare length, weight and capacity.

#### **Early Learning Goal Children**

- count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

Mathematics ELG: Number Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; 14 - 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. ELG: Numerical Patterns Children at the expected level of development will: - 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.

#### **Early Learning Goal Children**

ELG: Numerical Patterns Children at the expected level of development will:

- 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.

## Maths Curriculum Impact

### Year 1

<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s</li> <li>given a number, identify 1 more and 1 less</li> <li>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</li> <li>read and write numbers from 1 to 20 in numerals and words</li> </ul>
<b>Number – Addition and Place Value</b>	<ul style="list-style-type: none"> <li>read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</li> <li>represent and use number bonds and related subtraction facts within 20</li> <li>add and subtract one-digit and two-digit numbers to 20, including 0</li> <li>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = ? - 9</math></li> </ul>
<b>Number – Multiplication and Division</b>	<ul style="list-style-type: none"> <li>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</li> </ul>
<b>Number – Fractions</b>	<ul style="list-style-type: none"> <li>recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity</li> <li>recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>compare, describe and solve practical problems for: <ul style="list-style-type: none"> <li>lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</li> <li>mass/weight [for example, heavy/light, heavier than, lighter than]</li> <li>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</li> <li>time [for example, quicker, slower, earlier, later]</li> </ul> </li> <li>measure and begin to record the following: <ul style="list-style-type: none"> <li>lengths and heights</li> <li>mass/weight</li> <li>capacity and volume</li> <li>time (hours, minutes, seconds)</li> <li>recognise and know the value of different denominations of coins and notes</li> <li>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> </ul> </li> <li>recognise and use language relating to dates, including days of the week, weeks, months and years</li> <li>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> <li>2-D shapes [for example, rectangles (including squares), circles and triangles]</li> <li>3-D shapes [for example, cuboids (including cubes), pyramids and spheres]</li> </ul> </li> </ul>
<b>Geometry – Position and Direction</b>	<ul style="list-style-type: none"> <li>describe position, direction and movement, including whole, half, quarter and three-quarter turns</li> </ul>

Maths Curriculum Implementation								
Year 1								
	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value (within 10)			Number: Addition and Subtraction (within 10)			
Autumn 2 7	Number: Place Value (within 20)		Number: Addition and Subtraction (within 20)					
Spring 1 6	Measurement: Length and Height)			Number: Place Value (within 50)				
Spring 2 7	Measurement: Weight and Volume			Geometry: Shape		Geometry: Position and Direction		
Summer 1 4	Number: Place Value (within 100)			Number: Multiplication and Division				
Summer 2 7	Number: Multiplication and Division	Number: Fractions	Measurement: Money		Measurement: Time		Consolidation	

## Maths Curriculum Implementation

### Year 2

<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward</li> <li>recognise the place value of each digit in a two-digit number (10s, 1s)</li> <li>identify, represent and estimate numbers using different representations, including the number line</li> <li>compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</li> <li>read and write numbers to at least 100 in numerals and in words</li> <li>use place value and number facts to solve problems</li> </ul>
<b>Number – Addition and Place Value</b>	<ul style="list-style-type: none"> <li>solve problems with addition and subtraction: <ul style="list-style-type: none"> <li>using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>applying their increasing knowledge of mental and written methods</li> </ul> </li> <li>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> <li>a two-digit number and 1s</li> <li>a two-digit number and 10s</li> <li>2 two-digit numbers</li> <li>adding 3 one-digit numbers</li> </ul> </li> <li>show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot</li> <li>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problem</li> </ul>
<b>Number – Multiplication and Division</b>	<ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</li> <li>show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot</li> <li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</li> </ul>
<b>Number – Fractions</b>	<ul style="list-style-type: none"> <li>recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> <li>write simple fractions, for example <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</li> <li>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>find different combinations of coins that equal the same amounts of money</li> <li>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> <li>compare and sequence intervals of time</li> <li>tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</li> <li>know the number of minutes in an hour and the number of hours in a day</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line</li> <li>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</li> <li>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</li> <li>compare and sort common 2-D and 3-D shapes and everyday objects</li> </ul>
<b>Geometry – Position and Direction</b>	<ul style="list-style-type: none"> <li>order and arrange combinations of mathematical objects in patterns and sequences</li> <li>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)</li> </ul>
<b>Statistics</b>	<ul style="list-style-type: none"> <li>interpret and construct simple pictograms, tally charts, block diagrams and tables</li> <li>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>ask-and-answer questions about totalling and comparing categorical data</li> </ul>

Maths Curriculum Implementation								
Year 2								
	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value				Number: Addition and Subtraction		
Autumn 2 7	Number: Addition and Subtraction		Number: Multiplication and Division					
Spring 1 6	Number: Fractions							
Spring 2 7	Measurement: Money			Measurement: Length and Height		Measurement: Mass, Capacity and Temperature Statistics		
Summer 1 4	Measurement: Mass, Capacity and Temperature Statistics		Geometry: Properties of Shape, Position and Direction					
Summer 2 7	Measurement: Time			Statistics		Consolidation		

Maths Curriculum Implementation	
Year 3	
<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</li> <li>recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)</li> <li>compare and order numbers up to 1,000</li> <li>identify, represent and estimate numbers using different representations</li> <li>read and write numbers up to 1,000 in numerals and in words</li> <li>solve number problems and practical problems involving these ideas</li> </ul>
<b>Number – Addition and Subtraction</b>	<ul style="list-style-type: none"> <li>add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>a three-digit number and 1s</li> <li>a three-digit number and 10s</li> <li>a three-digit number and 100s</li> </ul> </li> <li>add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction</li> <li>estimate the answer to a calculation and use inverse operations to check answers</li> <li>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul>
<b>Number – Multiplication and Division</b>	<ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</li> <li>solve 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</li> </ul>
<b>Number – Fractions</b>	<ul style="list-style-type: none"> <li>count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</li> <li>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</li> <li>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> <li>recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>add and subtract fractions with the same denominator within one whole [for example, <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>]</li> <li>compare and order unit fractions, and fractions with the same denominators</li> <li>solve problems that involve all of the above</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</li> <li>measure the perimeter of simple 2-D shapes</li> <li>add and subtract amounts of money to give change, using both £ and p in practical contexts</li> <li>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</li> <li>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight</li> <li>know the number of seconds in a minute and the number of days in each month, year and leap year</li> <li>compare durations of events [for example, to calculate the time taken by particular events or tasks]</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</li> <li>recognise angles as a property of shape or a description of a turn</li> <li>identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle</li> <li>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</li> </ul>
<b>Statistics</b>	<ul style="list-style-type: none"> <li>interpret and present data using bar charts, pictograms and tables</li> <li>solve one-step and two-step questions [for example 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables</li> </ul>

Maths Curriculum Implementation								
<u>Year 3</u>								
	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value				Number: Addition and Subtraction		
Autumn 2 7	Number: Addition and Subtraction			Number: Multiplication and Division				
Spring 1 6	Number: Fractions							
Spring 2 7	Measurement: Money			Measurement: Length and Perimeter		Measurement: Mass and Capacity		
Summer 1 4	Geometry: Properties of Shape, Position and Direction							
Summer 2 7	Measurement: Time			Statistics		Consolidation		



## Maths Curriculum Implementation

### Year 4

<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>count in multiples of 6, 7, 9, 25 and 1,000</li> <li>find 1,000 more or less than a given number</li> <li>count backwards through 0 to include negative numbers</li> <li>recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)</li> <li>order and compare numbers beyond 1,000</li> <li>identify, represent and estimate numbers using different representations</li> <li>round any number to the nearest 10, 100 or 1,000</li> <li>solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value</li> </ul>
<b>Number – Addition and Subtraction</b>	<ul style="list-style-type: none"> <li>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>estimate and use inverse operations to check answers to a calculation</li> <li>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> </ul>
<b>Number – Multiplication and Division</b>	<ul style="list-style-type: none"> <li>recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers</li> <li>recognise and use factor pairs and commutativity in mental calculations</li> <li>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</li> </ul>
<b>Number – Fractions (including decimals)</b>	<ul style="list-style-type: none"> <li>recognise and show, using diagrams, families of common equivalent fractions</li> <li>count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10</li> <li>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</li> <li>add and subtract fractions with the same denominator</li> <li>recognise and write decimal equivalents of any number of tenths or hundreds</li> <li>recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math></li> <li>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</li> <li>round decimals with 1 decimal place to the nearest whole number</li> <li>compare numbers with the same number of decimal places up to 2 decimal places</li> <li>solve simple measure and money problems involving fractions and decimals to 2 decimal places</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>convert between different units of measure [for example, kilometre to metre; hour to minute]</li> <li>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>find the area of rectilinear shapes by counting squares</li> <li>estimate, compare and calculate different measures, including money in pounds and pence</li> <li>read, write and convert time between analogue and digital 12- and 24-hour clocks</li> <li>solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>identify acute and obtuse angles and compare and order angles up to 2 right angles by size</li> <li>identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul>
<b>Geometry – Position and Direction</b>	<ul style="list-style-type: none"> <li>describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>describe movements between positions as translations of a given unit to the left/right and up/down</li> <li>plot specified points and draw sides to complete a given polygon</li> </ul>
<b>Statistics</b>	<ul style="list-style-type: none"> <li>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> <li>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul>

Maths Curriculum Implementation								
<u>Year 4</u>								
	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value				Number: Addition and Subtraction		
Autumn 2 7	Number: Addition and Subtraction		Number: Multiplication and Division					
Spring 1 6	Number: Multiplication and Division		Number: Fractions					
Spring 2 7	Number: Fractions and Decimals		Measurement: Money		Measurement: Time			
Summer 1 4	Measurement: Area, Length and Perimeter							
Summer 2 7	Statistics		Geometry: Properties of Shape, Position and Direction			Consolidation		

Maths Curriculum Implementation	
Year 5	
<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit</li> <li>• count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</li> <li>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0</li> <li>• round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000</li> <li>• solve number problems and practical problems that involve all of the above</li> <li>• read Roman numerals to 1,000 (M) and recognise years written in Roman numerals</li> </ul>
<b>Number – Addition and Subtraction</b>	<ul style="list-style-type: none"> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>
<b>Number – Multiplication and Division</b>	<ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• 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</li> <li>• multiply and divide numbers mentally, drawing upon known facts</li> <li>• 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</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> <li>• solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul>
<b>Number – Fractions (including decimals and percentages)</b>	<ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>]</li> <li>• add and subtract fractions with the same denominator, and denominators that are multiples of the same number</li> <li>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> <li>• read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</li> <li>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>• round decimals with 2 decimal places to the nearest whole number and to 1 decimal place</li> <li>• read, write, order and compare numbers with up to 3 decimal places</li> <li>• solve problems involving number up to 3 decimal places</li> <li>• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction</li> <li>• solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>• convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>• calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>), and estimate the area of irregular shapes</li> <li>• estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]</li> <li>• solve problems involving converting between units of time</li> <li>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations</li> <li>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees (°) <ul style="list-style-type: none"> <li>○ identify angles at a point and 1 whole turn (total 360°)</li> <li>○ identify angles at a point on a straight line and half a turn (total 180°)</li> <li>○ identify other multiples of 90°</li> <li>○ identify use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>○ identify distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li> </ul> </li> </ul>
<b>Geometry – Position and Direction</b>	<ul style="list-style-type: none"> <li>• 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</li> </ul>
<b>Statistics</b>	<ul style="list-style-type: none"> <li>• solve comparison, sum and difference problems using information presented in a line graph</li> <li>• complete, read and interpret information in tables, including timetables</li> </ul>

Maths Curriculum Implementation								
Year 5								
	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value					Number: Addition and Subtraction	
Autumn 2 7	Number: Addition and Subtraction		Number: Multiplication and Division					
Spring 1 6	Number: Multiplication and Division		Number: Fractions					
Spring 2 7	Number: FDP					Measurement: Converting Units		
Summer 1 4	Measurement: Area and Perimeter			Measurement: Volume				
Summer 2 7	Statistics		Geometry: Properties of Shape, Position and Direction			Consolidation		

Maths Curriculum Implementation	
Year 6	
<b>Number – Number and Place Value</b>	<ul style="list-style-type: none"> <li>• read, write, order and compare numbers up to 10,000,000 and determine the value of each digit</li> <li>• round any whole number to a required degree of accuracy</li> <li>• use negative numbers in context, and calculate intervals across 0</li> <li>• solve number and practical problems that involve all of the above</li> </ul>
<b>Number – Addition, Subtraction, Multiplication and Division</b>	<ul style="list-style-type: none"> <li>• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>• 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</li> <li>• 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</li> <li>• perform mental calculations, including with mixed operations and large numbers</li> <li>• identify common factors, common multiples and prime numbers</li> <li>• use their knowledge of the order of operations to carry out calculations involving the 4 operations</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• solve problems involving addition, subtraction, multiplication and division</li> <li>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> </ul>
<b>Number – Fractions (including decimals and percentages)</b>	<ul style="list-style-type: none"> <li>• use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> <li>• compare and order fractions, including fractions <math>&gt;1</math></li> <li>• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>• multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>]</li> <li>• divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>]</li> <li>• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>]</li> <li>• identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places</li> <li>• multiply one-digit numbers with up to 2 decimal places by whole numbers</li> <li>• use written division methods in cases where the answer has up to 2 decimal places</li> <li>• solve problems which require answers to be rounded to specified degrees of accuracy</li> <li>• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li> </ul>
<b>Ratio and Proportion</b>	<ul style="list-style-type: none"> <li>• solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts</li> <li>• solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison</li> <li>• solve problems involving similar shapes where the scale factor is known or can be found</li> <li>• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</li> </ul>
<b>Algebra</b>	<ul style="list-style-type: none"> <li>• use simple formulae</li> <li>• generate and describe linear number sequences</li> <li>• express missing number problems algebraically</li> <li>• find pairs of numbers that satisfy an equation with 2 unknowns</li> <li>• enumerate possibilities of combinations of 2 variables</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>• solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate</li> <li>• 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 3 decimal places</li> <li>• convert between miles and kilometres</li> <li>• recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>• recognise when it is possible to use formulae for area and volume of shapes</li> <li>• calculate the area of parallelograms and triangles</li> <li>• calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>]</li> </ul>
<b>Geometry – Properties of Shapes</b>	<ul style="list-style-type: none"> <li>• draw 2-D shapes using given dimensions and angles</li> <li>• recognise, describe and build simple 3-D shapes, including making nets</li> <li>• compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons</li> <li>• illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</li> <li>• recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</li> </ul>
<b>Geometry – Position and Direction</b>	<ul style="list-style-type: none"> <li>• describe positions on the full coordinate grid (all 4 quadrants)</li> <li>• draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> </ul>
<b>Statistics</b>	<ul style="list-style-type: none"> <li>• interpret and construct pie charts and line graphs and use these to solve problems</li> <li>• calculate and interpret the mean as an average</li> </ul>

Maths Curriculum Implementation	
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	<u><b>Year 6</b></u>
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	1	2	3	4	5	6	7	8
Autumn 1 7+2		Number: Place Value		Number: Four Operations				
Autumn 2 7	Number FDP					Number: Algebra		
Spring 1 6	Number: Ratio		Measurement: Converting Units		Measurement: Area and Perimeter			
Spring 2 7	Measurement: Volume		Statistics		Geometry: Properties of Shape, Position and Direction			
Summer 1 4	SATs Preparation and Consolidation							
Summer 2 7	Investigations / Problem Solving / Preparation for KS3							

## Maths Curriculum Impact

### Year 1

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>count to twenty, forwards and backwards, beginning with 0 or 1, from any given number</li> <li>count, read and write numbers in numerals up to 20</li> <li><b>count in multiples of tens</b></li> <li><b>given a number, identify one more and one less</b></li> <li>represent and use number bonds and related subtraction facts within 10</li> <li>add and subtract one digit and two-digit numbers to 10, including zero</li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li><b>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</b></li> <li><b>count in multiples of twos and fives</b></li> <li><b>count, read and write in numerals up to 100</b></li> <li><b>represent and use number bonds and related subtraction facts within 20</b></li> <li>add and subtract one digit and two-digit numbers to 20, including zero</li> <li><b>recognise, find and name a half as one of two equal parts of an object, shape or quantity</b></li> <li>recognise and know the value of different denominations of coins and notes</li> <li>recognise and use language relating to dates, including days of the week and months of the year</li> <li><b>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</b></li> <li><b>recognise and name common 2-D shapes in different orientations and sizes i.e. including rectangles (including squares), circles and triangles</b></li> <li><b>recognise and name common 3-D shapes in different orientations and sizes - i.e. including cuboids (including cubes), pyramids and spheres</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems</li> <li>solve one step problems that involve multiplication and division, using concrete objects and pictorial representations and missing number problems</li> <li><b>compare, describe and solve practical problems for lengths and heights, mass or weight and capacity/volume</b></li> </ul>

## Maths Curriculum Impact

### Year 2

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• read and write numbers in numerals up to 100</li> <li>• partition a two-digit number into tens and ones to demonstrate an understanding of place value (may use structured resources to support)</li> <li>• add and subtract two-digit numbers and ones, and two-digit numbers and tens (no regrouping), explaining their method verbally, in pictures or using apparatus</li> <li>• recall at least four of the six number bonds for 10 and reason about associated facts (e.g. <math>6+4=10</math>, therefore <math>4+6=10</math> and <math>10-6=4</math>)</li> <li>• <b>count in twos, fives and tens from 0 (forward and backward)</b> and use this to solve problems (<b>including recognising odd and even numbers</b>)</li> <li>• <i>know the value of different coins</i></li> <li>• <i>name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties</i></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>count in tens from any number, forward and backward</b></li> <li>• read scales in divisions of ones, twos, fives and tens</li> <li>• <b>compare and order numbers from 0 up to 100; use <math>&lt;</math>, <math>&gt;</math>, <math>=</math></b></li> <li>• partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus</li> <li>• add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus</li> <li>• recall all number bonds to and within 10 and use these to reason with and <b>calculate bonds to and within 20</b>, recognising other associated additive relationships (<b>deriving related facts to 100</b>)</li> <li>• <b>recall multiplication and division facts for 2, 5 and 10</b> and use them to solve simple problems, demonstrating an understanding of commutativity as necessary</li> <li>• <b>identify <math>\frac{1}{4}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{2}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math>, of a number, shape, length or set of objects</b> and know that all parts must be equal parts of the whole</li> <li>• use different coins to make the same amount</li> <li>• read the time on a clock to the nearest 15 minutes</li> <li>• name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry</li> <li>• <b>interpret data from simple pictograms, tally charts, block diagrams and simple tables</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>solve number problems with number facts and place value from the Year 2 curriculum</b></li> <li>• read scales where not all numbers on the scale are given and estimate points in between</li> <li>• recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts</li> <li>• use reasoning about numbers and relationships to solve more complex problems and explain their thinking</li> <li>• <b>solve unfamiliar word problems</b> that involve more than one step, including the four operations</li> <li>• read the time on a clock to the nearest 5 minutes</li> <li>• describe similarities and differences of 2-D and 3-D shapes, using their properties</li> </ul>



## Maths Curriculum Impact

### Year 3

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>count from 0 in multiples of 100</b></li> <li>• <b>find 10 or 100 more or less than a given number</b></li> <li>• <b>count from 0 in multiples of 4, 8 and 50</b></li> <li>• identify, represent and estimate numbers to 1000 using different representations and partitioning in different ways</li> <li>• read and write numbers up to 1000 in numerals</li> <li>• compare and order numbers up to 1000</li> <li>• <b>mentally add and subtract numbers including a three-digit number with ones, tens or hundreds</b></li> <li>• <b>recall and use multiplication and division facts for the 3, 4 and 8 times tables</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• round whole numbers up to 100 to the nearest 10</li> <li>• <b>calculate mentally using multiplication and division facts for the 3, 4 and 8 multiplication tables, including two-digit times one-digit numbers</b></li> <li>• add and subtract numbers with up to three digits, using column addition and subtraction</li> <li>• <b>write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written method</b></li> <li>• <b>count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</b></li> <li>• <b>recognise, find and write fractions of a discrete set of objects, unit fractions and non-unit with small denominators</b></li> <li>• <b>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</b></li> <li>• <b>recognise and show, using diagrams, equivalent fractions with small denominators</b></li> <li>• <b>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12- and 24-hour clocks</b></li> <li>• <b>add and subtract amounts of money to give change, recording £ &amp; p separately</b></li> <li>• <b>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</b></li> <li>• describe 2-D shapes using accurate language, including lengths of lines and angles &lt; or &gt; than a right angle, and recognise 3-D shapes in different orientations and describe them</li> <li>• <b>interpret and present bar charts, pictograms and tables</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>solve number problems and practical problems with number and place value</b> and more complex addition and subtraction <b>from the Year 3 curriculum</b></li> <li>• solve calculation problems involving multiplication and division, including missing number problems, simple positive integer scaling and simple correspondence problems in which n objects are connected to m objects</li> <li>• solve problems with fractions from the Year 3 curriculum</li> <li>• convert between analogue and 12-hour digital clocks</li> <li>• solve problems with one or two steps using scaled bar charts, pictograms and tables</li> </ul>

## Maths Curriculum Impact

### Year 4

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>count in multiples of 1000; count backwards through zero to include negative numbers</b></li> <li>• find 1000 more or less than a given number</li> <li>• read and write numbers up to 10,000 in numerals</li> <li>• <b>order and compare numbers beyond 1000</b></li> <li>• recognise the place value of each digit in a four-digit number</li> <li>• use addition and subtraction facts to 100 and derive related facts up to 1000</li> <li>• <b>recall multiplication and division facts up to <math>12 \times 12</math></b></li> <li>• add and subtract numbers with up to 4 digits using column addition/subtraction</li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>round whole numbers to 10,000 to the nearest 10, 100 or 1000</b></li> <li>• multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>• divide two-digit and three-digit numbers by a one-digit number using formal written layout</li> <li>• divide a one or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</li> <li>• <b>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</b></li> <li>• recognise and write decimal equivalents of any number of tenths or hundredths and <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math></li> <li>• <b>recognise and show, using diagrams, families of common equivalent fractions</b></li> <li>• compare numbers with the same number of decimal places up to two decimal places</li> <li>• read, write and convert time between analogue and digital 12- &amp; 24-hour clocks</li> <li>• <b>convert from larger to smaller units of time</b></li> <li>• <b>convert from larger to smaller units of metric measure</b></li> <li>• <b>identify lines of symmetry in 2-D shapes presented in different orientations, including where the line of symmetry does not dissect the original shape</b></li> <li>• <b>compare and classify geometric shapes based on their properties and sizes (including types of quadrilaterals and triangles)</b></li> <li>• <b>plot specified points and draw sides to complete a given polygon</b></li> <li>• <b>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• solve number and practical problems with number and place value from the Year 4 curriculum</li> <li>• <b>solve calculation problems involving two-step addition and subtraction in context, deciding which operations to use and why</b></li> <li>• solve problems involving harder fractions to calculate and divide quantities, including non-unit fractions where the answer is a whole number</li> <li>• <b>solve simple measure and money problems involving fractions and decimals to two decimal places</b></li> </ul>

## Maths Curriculum Impact

### Year 5

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>count forwards and backwards with positive and negative whole numbers, including through zero</b></li> <li>• <b>read and write numbers to at least 1,000,000 and determine the value of each digit</b></li> <li>• <b>order and compare numbers to at least 1,000,000</b></li> <li>• <b>interpret negative numbers in context</b></li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> <li>• identify multiples and factors, including all factor pairs of a number, and common factors of 2 numbers</li> <li>• <b>add and subtract numbers mentally with increasingly large numbers</b></li> <li>• <b>add and subtract whole numbers with more than 4 digits, using column addition and subtraction</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 &amp; 100,000</li> <li>• multiply numbers up to 4 digits by a one-digit or two-digit number using short or long multiplication</li> <li>• divide numbers up to 4 digits by a one-digit number using formal written method of short division and interpret remainders appropriately for the context</li> <li>• <b>solve multiplication and division calculation problems (using their knowledge of factors and multiples, squares and cubes)</b></li> <li>• <b>solve problems involving scaling by simple fractions and problems involving simple rates</b></li> <li>• convert between mixed numbers and improper fractions</li> <li>• <b>read and write decimal numbers as fractions</b></li> <li>• apply multiplication facts to find equivalent fractions</li> <li>• <b>compare and order fractions whose denominators are all multiples of the same number</b></li> <li>• add and subtract fractions with the same denominator and denominators that are multiples of the same number, including calculations <math>&gt; 1</math></li> <li>• multiply proper fractions and mixed numbers by whole numbers</li> <li>• <b>read, write, order and compare numbers with up to three decimal places</b></li> <li>• <b>convert between different units of metric measure</b></li> <li>• <b>calculate the perimeter of composite rectilinear shapes</b></li> <li>• <b>calculate and compare the area of rectangles</b></li> <li>• <b>draw given angles, and measure them in degrees</b></li> <li>• <b>distinguish between regular and irregular polygons based on reasoning about equal sides and angles</b></li> <li>• <b>interpret and complete more complex tables, including timetables</b></li> <li>• <b>draw given angles, and measure them in degrees</b> and draw shapes with sides measured to the nearest millimetre</li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• solve problems involving addition, subtraction, multiplication and division, and a combination of these</li> <li>• round decimals with two decimal places to the nearest whole number and to 1dp</li> <li>• add and subtract decimals including those with a different number of decimal places</li> <li>• solve problems involving addition and subtraction involving numbers up to 3dp and fractions</li> <li>• <b>solve problems which require knowing key percentage and decimal equivalents</b></li> <li>• solve problems involving converting between units of time</li> <li>• solve comparison, sum and difference problems using information presented in a line graph and tables including timetables.</li> </ul>

## Maths Curriculum Impact

### Year 6

Developing: working towards the expected standard	Secure: working at the expected standard	Greater depth: working at greater depth
<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>calculate intervals across zero</b></li> <li>• read and write numbers to 10,000,000 and determine the value of digits</li> <li>• order and compare numbers up to 10,000,000</li> <li>• identify common factors, common multiples and prime numbers greater than 100</li> <li>• identify the value of each digit in numbers given to three decimal places</li> <li>• <b>use negative numbers in context</b> (add and subtract positive &amp; negative measurements)</li> <li>• multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</li> <li>• use common factors to simplify fractions</li> <li>• use common multiples to express fractions in the same denomination</li> <li>• calculate decimal fraction equivalents for a simple fraction</li> <li>• <b>interpret and present bar charts, pictograms and tables (including timetables)</b></li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>round whole numbers to 10,000,000 to a required degree of accuracy</b></li> <li>• <b>solve multistep addition and subtraction problems in less familiar contexts, deciding which operations and methods to use and why</b></li> <li>• <b>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</b></li> <li>• <b>divide numbers up to 4 digits by a two-digit whole number using the formal methods of short or long division, and interpret remainders as appropriate for the context as whole numbers, fractions or by rounding</b></li> <li>• <b>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</b></li> <li>• compare and order fractions, including fractions <math>&gt; 1</math></li> <li>• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>• multiply simple pairs of proper fractions and divide proper fractions by whole numbers</li> <li>• round decimals to 3dp or other approximations depending on the context</li> <li>• <b>use written division methods in cases where the answer has up to two decimal places</b></li> <li>• multiply one-digit numbers with up to two decimal places by whole numbers</li> <li>• <b>solve problems which require decimal answers to be rounded to specified degrees of accuracy</b></li> <li>• <b>use, read and write standard units with up to three decimal places, including converting from smaller to larger units and vice versa</b></li> <li>• solve problems involving the calculation of percentages and the use of percentages for comparison</li> <li>• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</li> <li>• compare and classify geometric shapes based on increasingly complex geometric properties and sizes</li> <li>• find unknown angles and lengths in triangles, quadrilaterals, and regular polygons</li> <li>• draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> <li>• interpret data in line graphs and pie charts</li> <li>• calculate and interpret the mean as an average</li> </ul>	<p>The pupil can:</p> <ul style="list-style-type: none"> <li>• <b>check answers to calculations with mixed operations and large numbers, choosing the most appropriate method, including estimation, and determining, in the context of a problem, an appropriate degree of accuracy</b></li> <li>• check answers to calculations with all four operations involving any numbers by rounding</li> <li>• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</li> <li>• solve problems involving similar shapes where the scale factor is known or can be found</li> <li>• solve problems with FDP from the Year 6 curriculum</li> <li>• express missing number problems algebraically</li> <li>• find pairs of numbers that satisfy an equation with two unknowns</li> <li>• solve measurement problems with decimal notation up to three decimal places and approximate equivalences between metric and imperial measurements</li> <li>• <b>solve problems using pie charts and line graphs</b></li> </ul>