



<p>The Intent of our <b>Maths</b> Curriculum is</p>	<p>... to teach our children how <b>to make sense of the world around them</b> by developing their ability to <b>calculate, reason and solve problems</b>. We want our children to recognise and understand relationships and patterns in numbers in the <b>environment</b> around them and develop mathematical skills for <b>life</b>. We expect Mathematics to be utilised as a tool <b>beyond</b> the daily Mathematics lessons and beyond the classroom.</p> <p>At Red Hall, we aim to provide our children with access to <b>high quality teaching and learning in mathematics</b>, which is both <b>challenging and enjoyable!</b> We use a <b>Mastery</b> approach to teaching (<i>which means it can be a little bit tricky at times!</i>), aiming for the <b>deepest levels of understanding</b>.</p>
<p>The experiences your child will receive are</p>	<p>... <b>memorable</b> Maths lessons, using a <b>range of manipulatives</b> (<i>an object which can be used to help the children understand something a little bit better</i>) to help develop a deepened understanding of mathematical concepts and <b>make connections</b> to <b>life</b> beyond the classroom. In maths, we learn more and remember more. <b>Objects, pictures, words, numbers and symbols are everywhere;</b> the approach to mathematics we use here at Red Hall incorporates all of these, in order to <b>enrich the learning experience</b> and staff provide many opportunities to help children to <b>explore and demonstrate</b> their mathematical understanding.</p>

	<p>We invite <b>parents and carers</b> into the <b>classroom</b> environment to work <b>alongside</b> their children across all areas of our curriculum. We <b>recognise and understand</b> that some of the adults we serve within the community are not confident with Maths themselves, which is why we need to <b>help our parents and carers</b> too, developing their self-confidence as well as the self-confidence of the children. SATs meetings / stay and play sessions / progress checks / access to Times Tables Rock Stars are some of the examples of the different things we do at Red Hall with the <b>children AND parents</b> to ensure they are all <b>learning and growing together</b>.</p>
<p>By the end of their time at Red Hall, we hope our children</p>	<p>... are <b>independent thinkers</b> with <b>inquisitive minds</b> (<i>which means that they are curious and keen to explore</i>), with a <b>secure mathematical foundation</b>. Children are <b>fluent</b> in the fundamentals (<i>necessary skills</i>) of mathematics, with the ability to <b>reason</b> mathematically and <b>solve problems</b> by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication</p> <p>Children will be <b>resilient</b>, and know that <b>it is OK to make mistakes</b>, that we learn from mistakes, and we need to <b>persevere with challenges</b> we may face in later life.</p>

Dream Believe Achieve



# EYFS (Taken from the 'Development Matters in the Early Years Foundation Stage (EYFS)' document)

## Number

16-36 months	30-50 months	40-60 months +
<ul style="list-style-type: none"> <li>• Knows that things exist, even when out of sight.</li> <li>• Beginning to organise and categorise objects, e.g. putting all the teddy bears together or teddies and cars in separate piles.</li> <li>• Says some counting words randomly.</li> <li>• Selects a small number of objects from a group when asked, for example, 'please give me one', 'please give me two'.</li> <li>• Recites some number names in sequence.</li> <li>• Creates and experiments with symbols and marks representing ideas of number.</li> <li>• Begins to make comparisons between quantities.</li> <li>• Uses some language of quantities, such as 'more' and 'a lot'.</li> <li>• Knows that a group of things changes in quantity when something is added or taken away.</li> </ul>	<ul style="list-style-type: none"> <li>• Uses some number names and number language spontaneously.</li> <li>• Uses some number names accurately in play.</li> <li>• Recites numbers in order to 10.</li> <li>• Knows that numbers identify how many objects are in a set.</li> <li>• Beginning to represent numbers using fingers, marks on paper or pictures.</li> <li>• Sometimes matches numeral and quantity correctly.</li> <li>• Shows curiosity about numbers by offering comments or asking questions.</li> <li>• Compares two groups of objects, saying when they have the same number.</li> <li>• Shows an interest in number problems.</li> <li>• Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.</li> <li>• Shows an interest in numerals in the environment.</li> <li>• Shows an interest in representing numbers.</li> <li>• Realises not only objects, but anything can be counted, including steps, claps or jumps.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise some numerals of personal significance.</li> <li>• Recognises numerals 1 to 5.</li> <li>• Counts up to three or four objects by saying one number name for each item.</li> <li>• Counts actions or objects which cannot be moved.</li> <li>• Counts objects to 10, and beginning to count beyond 10.</li> <li>• Counts out up to six objects from a larger group.</li> <li>• Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.</li> <li>• Counts an irregular arrangement of up to ten objects.</li> <li>• Estimates how many objects they can see and checks by counting them.</li> <li>• Uses the language of 'more' and 'fewer' to compare two sets of objects.</li> <li>• Finds the total number of items in two groups by counting all of them.</li> <li>• Says the number that is one more than a given number.</li> <li>• Finds one more or one less from a group of up to five objects, then ten objects.</li> <li>• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.</li> <li>• Records, using marks that they can interpret and explain.</li> <li>• Begins to identify own mathematical problems based on own interests and fascinations.</li> </ul>

### 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.



## EYFS (Taken from the 'Development Matters in the Early Years Foundation Stage (EYFS)' document)

Shape, Space and Measure		
16-36 months	30-50 months	40-60 onths +
<ul style="list-style-type: none"> <li>• Attempts, sometimes successfully, to fit shapes into spaces on inset boards or jigsaw puzzles.</li> <li>• Uses blocks to create their own simple structures and arrangements.</li> <li>• Enjoys filling and emptying containers.</li> <li>• Associates a sequence of actions with daily routines.</li> <li>• Beginning to understand that things might happen 'now'.</li> <li>• Notices simple shapes and patterns in pictures.</li> <li>• Beginning to categorise objects according to properties such as shape or size.</li> <li>• Begins to use the language of size.</li> <li>• Understands some talk about immediate past and future, e.g. 'before', 'later' or 'soon'.</li> <li>• Anticipates specific time-based events such as mealtimes or home time.</li> </ul>	<ul style="list-style-type: none"> <li>• Shows an interest in shape and space by playing with shapes</li> <li>• or making arrangements with objects.</li> <li>• Shows awareness of similarities of shapes in the environment.</li> <li>• Uses positional language.</li> <li>• Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.</li> <li>• Shows interest in shapes in the environment.</li> <li>• Uses shapes appropriately for tasks.</li> <li>• Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'.</li> </ul>	<ul style="list-style-type: none"> <li>• Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes.</li> <li>• Selects a particular named shape.</li> <li>• Can describe their relative position such as 'behind' or 'next to'.</li> <li>• Orders two or three items by length or height.</li> <li>• Orders two items by weight or capacity.</li> <li>• Uses familiar objects and common shapes to create and recreate patterns and build models.</li> <li>• Uses everyday language related to time.</li> <li>• Beginning to use everyday language related to money.</li> <li>• Orders and sequences familiar events.</li> <li>• Measures short periods of time in simple ways.</li> </ul>
<p><b>Early Learning Goal</b>            Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</p>		

# Year 1



Links to previous knowledge	Autumn	Spring	Summer
<p>The expectation by the end of EYFS in maths is:</p> <ul style="list-style-type: none"> <li>• Use everyday language to talk about: weight, capacity, position, distance, time and money.</li> <li>• Recognise, create and describe patterns,</li> <li>• Explore everyday objects and shapes and use math language to describe.</li> <li>• Count 1-20, order these numbers and say 1 more / 1 less.</li> <li>• Practically add / subtract two single-digit numbers.</li> <li>• Solve doubling, halving and sharing.</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• Count to and across 100 - forwards and back from any given number</li> <li>• Given a number, identify one more and one less</li> <li>• Identify and represent numbers using objects and pictures</li> <li>• Read and Write numerals in numbers and words 1-20</li> <li>• Use mathematical language: equal to, more/less than, most, least</li> <li>• Read and write numbers to 100 in numerals</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• Confidently recall number bonds to 10</li> <li>• Recall doubles and halves to 10</li> <li>• Confidently recall number bonds to 20</li> <li>• Add and subtract 1-digit from a 2-digit number up to 20 - including 0</li> <li>• Solve 1-step problems involving addition and subtraction, using resources</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Recognise, find and name fractions - <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math></li> <li>• Find <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math> of shapes and quantities</li> <li>• Use reasoning when discussing fractions, using correct mathematical language e.g. equal parts</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• Describe position using language: left, right, on top of, under, forwards, backwards, near, around etc.</li> <li>• Recognise and name common 2D shapes</li> <li>• Recognise and name common 3D shapes</li> <li>• Describe movement using language: whole turn, half turn, three-quarter turn, clockwise</li> <li>• Begin to identify some of the properties of 2D shapes</li> <li>• Begin to identify some of the properties of 3D shapes</li> <li>• Make connections between movement language and the movement on the face of a clock e.g. turning clockwise</li> </ul>	<p><b>Measure</b></p> <ul style="list-style-type: none"> <li>• Compare and describe practical problems for: length and height, mass/weight, capacity and volume, time</li> <li>• Recognise different denominations of coins and notes</li> <li>• Measure and begin to record: length and height, mass/weight, capacity and volume, time</li> <li>• Solve practical problems for: length and height, mass/weight, capacity and volume, time</li> <li>• Sequence events in chronological order</li> <li>• Recognise and use language relating to dates</li> <li>• Tell the time to 1 hour / half past the hour, and be able to demonstrate by drawing hands on a clock</li> </ul>

	<p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"><li>• Solve 1-step problems involving multiplication and division, using resources</li><li>• Count in multiples of 2, 5 and 10</li></ul>		
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# Year 2



Links to previous knowledge	Autumn	Spring	Summer
<p>The expectation by the end of Year 1 is that all pupils will:</p> <ul style="list-style-type: none"> <li>Count to and across 100</li> <li>Identify one more / one less from any given number up to 100</li> <li>Read and write numerals to 100</li> <li>Recall with confidence, number bonds to 20</li> <li>Recall doubles and halves of numbers to 10</li> <li>Add and subtract a one-digit number from a two-digit number, up to 20</li> <li>Solve 1 step problems involving addition and subtraction, multiplication and division</li> <li>Recognise, find and name fractions (<math>\frac{1}{2}</math> and <math>\frac{1}{4}</math>)</li> <li>Recognise and name common 2D and 3D shapes</li> <li>Tell the time to one hour / half past the hour</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>I can demonstrate an understanding of place value, using apparatus to support me</li> <li>I can read and write numbers correctly in numerals up to 100</li> <li>I can count in twos, fives and tens from 0 and use counting strategies to solve problems</li> <li>I can partition two-digit numbers into different combinations of tens and ones, using resources if needed</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>I can use number bonds and related subtraction facts within 20</li> <li>I can recall doubles and halves to 20</li> <li>I can add and subtract a 2-digit number and ones and a 2-digit number and tens, where no regrouping is required</li> <li>I can subtract mentally a two-digit number from another two-digit number when there is no regrouping required</li> <li>I can recognise the inverse relationships between addition and subtraction and use this to check</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>I can identify <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math> and knows that all parts must be equal parts of the whole</li> <li>I can find and compare fractions of amounts (e.g. <math>\frac{1}{4}</math> of £20 = £5 and <math>\frac{1}{2}</math> of £8 = £4)</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>I can recognise and name common 2-D shapes, including for example, rectangles, squares, circles and triangles and name some differences</li> <li>I can recognise and name common 3-D shapes, including for example, cuboids, cubes, pyramids and spheres and name some differences</li> <li>I can describe properties of 2-D and 3-D shapes</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>I can read and interpret tally charts, pictograms and bar charts</li> </ul>	<p><b>Measure</b></p> <ul style="list-style-type: none"> <li>I can compare, measure, describe and solve practical problems for: mass/weight using scales and mathematical language</li> <li>I can compare, measure, describe and solve practical problems for: capacity and volume using containers and mathematical language</li> <li>I can recognise and know the value of different denominations of coins and notes</li> <li>I can read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given</li> <li>I can use different coins to make the same amount</li> <li>I can compare and sequence intervals of time: tell and write the time to fifteen minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</li> <li>I know the number of minutes in an hour and the number of hours in a day</li> </ul>

	<p>calculations and work out missing number problems e.g. <math>\Delta - 14 = 28</math></p> <ul style="list-style-type: none"><li>• I can add 2 two-digit numbers within 100 (e.g. <math>48 + 35</math>) and can demonstrate my method using concrete apparatus or pictorial representations</li><li>• I can use estimation to check that my answers to a calculation are reasonable</li></ul> <p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"><li>• I can recall and use multiplication and division facts for the 2, 3, 5 and 10 multiplication tables to solve simple problems, demonstrating an understanding of commutativity as necessary</li></ul>		
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# Year 3



Links to previous knowledge	Autumn	Spring	Summer
<p>The expectation by the end of KS1, is that all pupils will:</p> <ul style="list-style-type: none"> <li>• Have developed secure foundations of place value and number knowledge.</li> <li>• be able to rapidly recall number bonds to 20</li> <li>• be able to rapidly recall multiplication and division facts for 2, 3, 5 and 10 times tables.</li> </ul> <p>This will impact on the progress your child makes through Year 3, and allow them to rapidly calculate using the four operations - addition, subtraction, multiplication and division.</p> <ul style="list-style-type: none"> <li>• identify and recognise a range of 2D and 3D shapes, ready to develop their knowledge of the properties of these shapes as they progress to Year 3.</li> <li>• identify coins and use different coins to make the same amount</li> <li>• tell the time to 15 minutes (quarter past / quarter to)</li> <li>• read data - interpreting and construction simple pictograms,</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• Find 10 or 100 more / less than any given number</li> <li>• Read and write numbers up to 1000 in numerals</li> <li>• Recall number bonds within 100</li> <li>• Recognise the value of each digit in numbers up to 1000</li> <li>• Compare and order numbers to 1000</li> <li>• Write, in word, any number to 1000</li> <li>• Solve number problems and practical problems involving place value</li> <li>• Count in groups of 4, 8, 50 and 100 from 0</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• Mentally subtract: 3-digit - 1-digit, 3-digit - tens, 3-digit - hundreds</li> <li>• Calculate missing number problems</li> <li>• Use column addition and column subtraction with numbers up to 4-digits</li> <li>• Use the inverse operation to check answers</li> <li>• Solve complex addition and subtraction problems</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Count up and down in tenths</li> <li>• Recognise, find and write fractions of a discrete set of objects - small denominators</li> <li>• Recognise and show equivalent fractions with the same denominator</li> <li>• Solve problems involving fractions</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• Recognise and name common 2D shapes and list properties</li> <li>• Recognise and name common 3D shapes and list properties</li> <li>• Draw 2D shapes</li> <li>• Recognise angles as a property of a shape / description of a turn</li> <li>• Identify right angles within 2D shapes</li> <li>• Understand and recognise perpendicular / parallel lines</li> </ul>	<p><b>Measure</b></p> <ul style="list-style-type: none"> <li>• Know the number of seconds in an hour, hours in a day, days in each month, days in a year / leap year</li> <li>• Measure and compare: length and height, mass/weight, capacity and volume, time</li> <li>• Measure the perimeter of 2D shapes</li> <li>• Add and subtract amounts of money to give change</li> <li>• Measure time from analogue clock as well as 12-hour and 24-hour clocks</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Represent and interpret data from bar charts, pictograms and tables, and solve 1-step problems associated with the data</li> <li>• Solve 2-step problems associated with the data</li> </ul>

<p>tally charts, block diagrams and simple tables.</p>	<p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"><li>• Recall 3, 4, 8 times tables</li><li>• Use formal method to multiply 2-digit by 1-digit – short multiplication</li><li>• Use formal method to divide 2-digit by 1-digit – short division</li><li>• Solve 2-step multiplication and division problems</li></ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"><li>• Recognise fractions and use mathematical language e.g. numerator, denominator, equal parts</li><li>• Calculate fractions of quantities</li><li>• Compare and order fractions</li></ul>		
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# Year 4



Links to previous knowledge	Autumn	Spring	Summer
<p>The expectation by the end of Year 3 is that all pupils will:</p> <ul style="list-style-type: none"> <li>• Confidently find 10 / 100 more / less than any given number</li> <li>• Read and write numbers to 1,000 with confidence</li> <li>• Recall number bonds within 100</li> <li>• Count in groups of 3, 4, 8, 50, 100</li> <li>• Use column addition and subtraction with numbers with up to 4-digits</li> <li>• Use short multiplication and short division to multiply / divide 2-digit numbers by 1-digit number</li> <li>• Calculate fractions of quantities and amounts</li> <li>• Show equivalent fractions using knowledge of common multiples</li> <li>• Measure time from an analogue clock, as well as 12 hour and 24 hour clocks</li> <li>• Recognise and identify angles within 2D shapes</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• Recognise the value of each digit in numbers up to 10,000</li> <li>• Compare and order numbers beyond 1000</li> <li>• Write, in words, 4-digit numbers beyond 1000</li> <li>• Solve number problems and practical problems involving place value</li> <li>• Recognise Roman numerals to 100</li> <li>• Count forward and back through 0, to include negative numbers</li> <li>• Round numbers to the nearest 10, 100, 1000</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• Use column addition and column subtraction with numbers up to 4-digits</li> <li>• Use the inverse operation to check answers</li> <li>• Solve complex 2-step addition and subtraction problems</li> </ul> <p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Count in multiples of 6, 7, 8, 9, 25 and 1000</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Count up and down in hundredths</li> <li>• Recognise and write decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{3}{4}</math>, <math>1/10</math>, <math>1/100</math></li> <li>• Divide two digit numbers by 10 and 100</li> <li>• Round decimals to 1dp and nearest whole numbers</li> <li>• Solve problems involving fractions</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals and triangles based on size and properties</li> <li>• Describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>• Identify acute and obtuse angles</li> <li>• Identify lines of symmetry in 2D shapes</li> <li>• Complete a simple symmetric figure with respect to a specific line of symmetry</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>	<p><b>Measure</b></p> <ul style="list-style-type: none"> <li>• Read and write the time on analogue, digital 12/24 hour clocks</li> <li>• Convert units of measure - hours to minutes, km to m</li> <li>• Measure the perimeter of rectilinear shapes in cm and m</li> <li>• Calculate the area of squares and rectangles</li> <li>• Convert between analogue and digital times</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Represent and interpret data from bar charts and time graphs, and solve 1-step problems associated with the data</li> <li>• Solve 2-step problems associated with the data - comparisons, sum, difference</li> </ul>

<ul style="list-style-type: none"> <li>• Understand the terms perpendicular and parallel when discussing properties of shape</li> <li>• Be able to calculate the perimeter of 2D shapes</li> <li>• Measure and compare length, height, mass, capacity and volume</li> </ul>	<ul style="list-style-type: none"> <li>• Recall factors and understand commutativity</li> <li>• Multiply 3 numbers e.g. <math>10 \times 6 \times 4</math></li> <li>• Use formal method to multiply 2-digit by 1-digit – short multiplication</li> <li>• Use formal method to multiply 3-digit by 1-digit – short multiplication</li> <li>• Use formal method to divide 2-digit by 1-digit – short division</li> <li>• Solve 2-step multiplication and division problems</li> <li>• Recall all multiplication and division facts up to <math>12 \times 12</math></li> </ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Recognise fractions and use mathematical language e.g. numerator, denominator, equal parts</li> <li>• Calculate fractions of quantities</li> <li>• Recognise and show common equivalent fractions</li> <li>• Add and subtract fractions which have the same denominator</li> <li>• Order and compare decimals to 2dp</li> </ul>		
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# Year 5



Links to previous knowledge	Autumn	Spring	Summer
<p>The expectation by the end of Year 4 is that all pupils will:</p> <ul style="list-style-type: none"> <li>• Be able to recognise the value of each digit in numbers up to 10,000</li> <li>• Be able to rapidly recall multiplication and division facts to 12x12.</li> <li>• Use the following formal methods: column addition and subtraction, short multiplication, short division.</li> <li>• Be able to recognise equivalent fractions and calculate</li> <li>• Understand how to multiply and divide whole numbers by 10 and 100, using this knowledge to begin to convert measures</li> <li>• Have an understanding of area and perimeter, and be able to calculate the area and perimeter of compound shapes</li> <li>• Have a good understanding of properties of 2D and 3D shapes, as well as angles</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• Recognise the value of each digit in numbers up to 1,000,000</li> <li>• Order and compare number to at least 1,000,000</li> <li>• Count forward and back from any given number, in powers of 10, up to 1,000,000</li> <li>• Round to the nearest 10, 100, 1000, 10,000, 100,000</li> <li>• Solve number problems for place value</li> <li>• Recognise Roman numerals to 1000</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• Use column addition and column subtraction with numbers beyond 4-digits</li> <li>• Solve multi-step problems involving addition and subtraction</li> </ul> <p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Recall multiples and factors up to 12x12</li> <li>• Recall prime numbers to 100</li> <li>• Understand and be able to recall factor pairs and common factors</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Convert mixed numbers to improper fractions and vice versa</li> <li>• Multiply fractions, including multiplying fractions by whole numbers</li> <li>• Round decimals with 2dp to the nearest whole number and 1dp</li> <li>• Read, write, order and compare decimals</li> <li>• Recognise % and write percentages as decimals and fractions</li> <li>• Solve problems involving fractions, decimals and percentages</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• Recognise 3D shapes from 2D representations</li> <li>• Estimate acute, obtuse and reflex angles</li> <li>• Measure angles using a protractor</li> <li>• Draw angles using a protractor</li> <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>	<p><b>Measure</b></p> <ul style="list-style-type: none"> <li>• Convert units of measure - km/m, cm/m, g/kg, l/ml</li> <li>• Measure the perimeter of composite rectilinear shapes in cm and m</li> <li>• Estimate volume and capacity</li> <li>• Calculate the area of squares and rectangles</li> <li>• Solve problems involving converting measures, including time</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Complete, read and interpret data using a range of graphs / charts, including time tables</li> <li>• Solve 2-step problems associated with the data - comparisons, sum, difference</li> </ul>

- Multiply 4-digit numbers by 1-digit numbers - short multiplication
- Be able to square and cube numbers to 10
- Multiply numbers with up to 4-digits by 2-digits - long multiplication
- Divide 4-digit numbers by 1-digit - short division
- Multiply and divide numbers by 10, 100 and 1000, including decimal numbers
- Solve multiplication problems involving 2-steps

**Fractions, Decimals and Percentages**

- Compare fractions of the same denominator
- Identify, name and write equivalent fractions, representing visually
- Read and write decimal numbers as fractions e.g.  $\frac{1}{2} = 0.5$
- Add and subtract fractions with the same denominator



# Year 6

Links to previous knowledge	Autumn	Spring	Summer
<p>As children progress to Year 6, the foundations of mathematical knowledge are expected to be embedded, from number bonds, to multiplication and division facts; from knowledge of 2D and 3D shapes, to an understanding of types of angles.</p> <p>The expectation by the end of Year 5 is that all pupils will:</p> <ul style="list-style-type: none"> <li>• Be able to square and cube numbers to 10</li> <li>• Recognise the place value of each digit in numbers up to 1,000,000</li> <li>• Round any given number to the nearest 10, 100, 1000, 10,000, 100, 000, 1,000,000</li> <li>• Use column addition and subtraction with numbers beyond 4-digits</li> <li>• Multiply and divide numbers by 10, 100, 1000 - including decimal numbers</li> <li>• Multiply fractions, by fractions and integers</li> </ul>	<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• I can order and compare numbers up to 10,000,000, as well as 3-digit numbers with up to 3 decimal places</li> <li>• I can round any given number to the nearest 10, 100, 1000</li> <li>• I can use negative numbers in context, and calculate intervals across zero</li> <li>• I can read Roman numerals to 100 (I-C)</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• I can add and subtract numbers beyond 4-digits using the formal written method, learning how to estimate first</li> <li>• I can calculate mentally, using efficient strategies</li> <li>• I can use formal methods to solve multi-step problems involving addition and subtraction</li> </ul> <p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Rapidly recall multiplication and division facts up to 12x12</li> </ul>	<p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• Recognise % and write percentages as decimals and fractions</li> <li>• I can calculate using fractions, decimals and percentages (addition, subtraction, multiplication and division) and use apply these skills to problem solving</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• I can draw regular and irregular polygons using given angles</li> <li>• I can measure angles in degrees using a protractor</li> <li>• I can use my mathematical reasoning to calculate missing angles, including vertically opposite angles</li> <li>• I can use rotation and translation, using a four-quadrant grid</li> <li>• Recall properties of 3D shapes and be able to recognise 3D shapes from 2D representations</li> <li>• Build simple 3D shapes, including making nets</li> <li>• I can compare and classify geometric shapes based on their properties and sizes</li> </ul>	<p>Consolidation of skills and knowledge which may not have appeared secure during SAT's. This will be personalised learning to different ability groups.</p> <p>Deepening understanding of previously taught concepts. This will be done through a series of investigative activities, allowing children to demonstrate and develop their application of mathematical skills.</p> <p>Financial Project - preparing children for managing money later in life.</p>

<ul style="list-style-type: none"> <li>• Convert mixed numbers to improper fractions and vice versa</li> <li>• Write percentages as decimals and fractions</li> <li>• Convert units of measure with confidence</li> <li>• Measure and draw angles using a protractor</li> <li>• Use translation and reflection of shapes in a 4-quadrant grid</li> <li>• Read and interpret data using a range of graphs / charts, including timetables</li> </ul> <p>So long as this knowledge is sound, children will then be able to deepen their understanding of concepts throughout Year 6 and begin to focus on reasoning and problem solving, where they are required to apply the skills and knowledge they should have already secured.</p> <p>The only new knowledge taught in the Year 6 curriculum is Algebra and the targets relating to Circles.</p>	<ul style="list-style-type: none"> <li>• I can identify common multiples, common factors and prime numbers</li> <li>• Multiply numbers with up to 4-digits by 1-digit numbers - short multiplication and division</li> <li>• Multiply 4-digit numbers by 2-digit - long multiplication</li> <li>• Divide 4-digit numbers by 2-digit - long division</li> <li>• Solve multiplication and division problems involving 2-steps</li> </ul> <p><b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>• I can recognise and show, using diagrams, families of common equivalent fractions</li> <li>• I can compare and order fractions greater than 1</li> <li>• I can use common factors to write fractions in their simplest forms</li> <li>• Convert mixed numbers to improper fractions and vice versa</li> <li>• Multiply fractions, including multiplying fractions by whole numbers</li> <li>• I can write fractions as decimals</li> </ul>	<ul style="list-style-type: none"> <li>• I can illustrate and name parts of circles, including radius, diameter and circumference, knowing that the diameter is twice the radius</li> </ul> <p><b>Measure</b></p> <ul style="list-style-type: none"> <li>• I can calculate and compare the area of parallelograms and triangles and estimate the area of irregular shapes</li> <li>• I can substitute values into a simple formula to solve problems</li> <li>• I can use, read and convert between units of measure</li> <li>• I can use all four operations to solve multi-step word problems involving measure</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Complete, read and interpret data using a range of graphs / charts, including time tables, line graphs and pie charts</li> <li>• I can solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</li> <li>• I can calculate and interpret the mean as an average</li> <li>• Solve 2-step problems associated with the data - comparisons, sum, difference, using reasoning to justify answers</li> <li>• In Algebra, I can: <ul style="list-style-type: none"> <li>- use simple formulae</li> </ul> </li> </ul>	
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