

Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Count to 50, forwards numbers up to 50 F</p> <p>Count, read and write numbers to 100 in numerals, count in multiples of twos and tens e.g. 2, 4, 6, 8, 10, ... F</p> <p>Given a number, identify one more and one less F</p> <p>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 R</p> <p>Read and write numbers from 1 to 20 in numerals with the correct formation F</p> <p>Begin to recognise place value in numbers up to 20 by reading, counting and comparing numbers up to 100 supported by objects and pictorial representations</p>	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Count to 50, backwards, beginning with 0 or 1, or Or numbers to 100 F</p> <p>Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens e.g. 22, 24, 26, 28, 30, ... or 90, 80, 70, 60, ... F</p> <p>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, greater than, less than (fewer), most, least using the correct symbols accordingly (&lt;=&gt;) R</p> <p>Read and write numbers from 1 to 20 in numerals and words. F</p> <p>Use language of ordering e.g. first, second, third. F</p>	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Count to and across 50, forwards and backwards, beginning with 0 or 1, or from any given number F</p> <p>Given a number between 1- 20, identify one more and one less F</p> <p>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 and are able to order numbers smallest to biggest. R</p> <p>Revisit Read and write numbers from 1 to 30 in numerals and words. F</p> <p>Use language of ordering e.g. first, second, third, fourth, fifth. F</p> <p>Begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing</p>	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Revisit Counting to and across 100, forwards from any given number F</p> <p>From any given number, identify one more and one less F</p> <p>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 and are able to order numbers biggest to smallest. R</p> <p>Revisit Read and write numbers from 1 to 40 in numerals and words. F</p> <p>Use language of ordering e.g. first, second, third, fourth, fifth, sixth. F</p> <p>Begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 50</p>	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Count to and across 100, backwards, from any given number e.g. 103, 102, 101, 100, 99, ... F</p> <p>Count, read and write numbers to 100 in numerals, count from any multiples of twos, fives and tens e.g. 5, 10, 15, 20, 25, ... F</p> <p>Given a number, identify one more and one less 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 and are able to identify missing numbers from numbers 1-30. R</p> <p>Read and write numbers from 1 to 50 in numerals and words. F</p> <p>Use language of ordering e.g. first, second, third</p>	<p><b>NUMBER</b></p> <p><b>Place value and rounding</b></p> <p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number e.g. 103, 102, 101, 100, 99, 98, ... F</p> <p>Count, read and write numbers to 100 in numerals, count in multiples of twos, fives and tens e.g. 5, 10, 15, 20, 25, ... and count backwards in multiple of tens from 100. F</p> <p>Given a number, identify one more and one less 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 are able to identify missing numbers from numbers 1-50. R</p> <p>Consolidate Reading and writing numbers from 1 to 20 in numerals and</p>

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## Maths Overview

<p>F</p> <p><b>Addition and subtraction</b> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs using numbers 1-20.</p> <p>F</p> <p>Represent, memorise and use number bonds and related subtraction facts within 10, in several forms e.g. <math>3 + 4 = 7</math>; <math>4 = 7 - 3</math>;</p> <p>F</p> <p>Add and subtract one-digit and two-digit numbers to 20 (<math>9 + 9</math>, <math>18 - 9</math>), including zero</p> <p>F</p> <p>Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems e.g. <math>3 + \quad = 7</math></p> <p>PS</p> <p>Problems should include</p>	<p><b>Addition and subtraction</b> Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems e.g. <math>3 + \quad = 7</math></p> <p>PS</p> <p>Represent, memorise and use number bonds and related subtraction facts within 10, in several forms e.g. <math>3 + 4 = 7</math>; <math>4 = 7 - 3</math>; and begin to know doubles to 20 e.g. <math>8 + 8 = 16</math> complements to 20 e.g. <math>8 + 12 = 20</math></p> <p>F</p> <p><b>Multiplication and division</b> Double and halve numbers to 20 e.g. double 6 is 12, half of 10 is 5</p> <p>F</p> <p><b>Fractions</b> Recognise, find and name a half as one of two equal parts of an object, shape, length or quantity e.g.</p>	<p>numbers up to 100 supported by objects and pictorial representations</p> <p>F</p> <p><b>Addition and subtraction</b> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs using a one digit and a two digit number.</p> <p>R</p> <p>Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations from numbers 1-30</p> <p>PS/R</p> <p>Problems should include vocabulary such as: put together, add, altogether, total, take away, more than, less than...</p> <p><b>Multiplication and division</b> Double and halve numbers to 20 e.g.</p>	<p>supported by objects and pictorial representations.</p> <p>PS</p> <p>Begin to order numbers to 50</p> <p>F</p> <p><b>Addition and subtraction</b> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs using numbers 1-30.</p> <p>F</p> <p>Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations, from numbers 1-50</p> <p>PS/R</p> <p>Problems should include vocabulary such as: put together, add, altogether, total, take away, distance between, more than, less than...</p> <p><b>Fractions</b> Recognise, find and name a half as one of two equal</p>	<p>fourth, fifth, sixth, seventh, eighth.</p> <p>F</p> <p>Begin to recognise place value in numbers beyond 50 by reading, writing, counting and comparing numbers up to 70 supported by objects and pictorial representations</p> <p>F</p> <p>Begin to order numbers to 100 (different tens)</p> <p>F</p> <p>Recognise odd and even numbers using pictorial and concrete resources</p> <p>F</p> <p><b>Addition and subtraction</b> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs using numbers 1-50.</p> <p>PS</p> <p>Represent, memorise and use number bonds and related subtraction facts within 20, in several forms e.g. <math>9 + 7 = 16</math>; using their double facts and numbers bonds to 20</p>	<p>words.</p> <p>F</p> <p>Use language of ordering e.g. first, second, third up to tenth.</p> <p>PS</p> <p>Begin to recognise place value in numbers beyond 70 by reading, writing, counting and comparing numbers up to 100 supported by objects and pictorial representations</p> <p>F</p> <p>Revisit begin to order numbers to 100 (different tens)</p> <p>F</p> <p>Recognise odd and even numbers</p> <p>F</p> <p><b>Addition and subtraction</b> Revise Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</p> <p>PS</p> <p>Revisit Represent, memorise and use number bonds and related subtraction facts</p>
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Maths Overview

<p>vocabulary such as: put together, add, altogether, total, take away, more than, less than...</p>	<p>Find half of a length of string, by folding; F</p> <p><b>MEASUREMENT</b> Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)</li> </ul> <p>Use non-standard measures to measure and begin to record the following:</p> <ul style="list-style-type: none"> <li>lengths and heights</li> <li>mass/weight</li> <li>capacity and volume</li> </ul> <p>PS</p> <p>Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon, and evening</p> <p>PS</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months, and years</p>	<p>double 8 is 16, half of 20 is 10 F</p> <p><b>Fractions</b> Recognise, find and name a half as one of two equal parts of an object, shape, length or quantity and half of numbers up to 10 e.g. What is half of 12 counters? PS</p> <p><b>MEASUREMENT</b> Compare, describe, and solve practical problems for:</p> <ul style="list-style-type: none"> <li>revisit lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)</li> <li>mass or weight (e.g. heavy/light, heavier than, lighter than)</li> </ul> <p>PS</p> <p>Begin to use measuring tools (ruler, weighing scales, containers) to measure and begin to record the following:</p> <ul style="list-style-type: none"> <li>lengths and</li> </ul>	<p>parts of an object, shape, length or quantity e.g. What is half of 12 counters? and half of numbers up to 20. F</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity e.g. find a quarter of a shape, by folding in half and half again. R</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity e.g. find <math>\frac{1}{4}</math> of 12 beads, practically R</p> <p><b>MEASUREMENT</b> Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)</li> <li>mass or weight (e.g. heavy/light, heavier than,</li> </ul>	<p><math>16 - 7 = 9</math>; <math>7 = 16 - 9</math> R</p> <p>Add and subtract one-digit and two-digit numbers to 20 (<math>9 + 9</math>, <math>18 - 9</math>), including zero F</p> <p>Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems e.g. <math>7 = \quad - 9</math> PS</p> <p>Problems should include vocabulary such as: put together, add, altogether, total, take away, distance between, more than, less than, difference</p> <p><b>Multiplication and division</b> Double and halve numbers to 20 F</p> <p>Solve one-step problems involving multiplication</p>	<p>within 20, in several forms e.g. <math>9 + 7 = 16</math>; <math>16 - 7 = 9</math>; <math>7 = 16 - 9</math> using their double facts and numbers bonds to 20 within word problems. PS/R</p> <p>Add and subtract one-digit and two-digit numbers to 20 (<math>9 + 9</math>, <math>18 - 9</math>), including zero Solve simple one-step problems (in familiar practical contexts, including using quantities) that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems e.g. <math>7 = \quad - 9</math> and equivalent number problems eg <math>3+4=1+...</math> PS</p> <p>Problems should include vocabulary such as: put together, add, altogether, total, take away, distance between, more than, less than difference and equal to</p> <p><b>Fractions</b> Recognise, find and name</p>
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					<p>today, yesterday, tomorrow, morning, afternoon and evening. To be able to sequence identify how many days are in a week. To identify how many days are in each month.</p> <p>PS</p> <p>Revisit Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>PS</p> <p>Tell the time to the hour and draw the hands on a clock face to show these times.</p> <p>PS</p> <p><b>GEOMETRY</b> Properties of shapes Recognise and name common 2-D and 3-D shapes, in different orientations and sizes, including: 2-D shapes (e.g. rectangles (including squares), circles and triangles) 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres). know that rectangles, triangles, cuboids and</p>	<p>each month.</p> <p>PS</p> <p>To be able to answer word problems around months and days of the week.</p> <p>PS/R</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years. Answer words problems and reason questions based on the weeks and days of the month.</p> <p>PS</p> <p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>PS</p> <p><b>GEOMETRY</b> Properties of shapes Recognise and name common 2-D and 3-D shapes, in different orientations and sizes, including: 2-D shapes (e.g. rectangles (including squares), circles and triangles) 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres).</p>
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					<p>pyramids can be different shapes</p> <p>F</p> <p><b>Position and direction</b> Describe position, directions and movements, clockwise and anti clockwise direction</p> <p>PS</p>	<p>know that rectangles, triangles, cuboids and pyramids can be different shapes.</p> <p>F</p> <p>To be able to answer word problems and reason using shape.</p> <p>PS/R</p> <p>Reason using the language Position and direction</p> <p>Describe positions, directions and movements using language such as left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside...</p> <p>M</p> <p>Describe position, directions and movements, including half, quarter and three-quarter turns, in a clockwise direction</p> <p>PS</p> <p>Sports Week Collect, read, record and present information using Tally marks.</p> <p>PS</p>
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<p>Year 2</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            Count in steps of 2 and 5 from 0, and tens from any number, forward or backward e.g. 93, 83, 73, 63, ...            F            recognise the place value of each digit in a two-digit number (tens, ones) using physical, pictorial and written representations (including numicon, deines, part whole, block).            F            Embed reading and writing of numbers 1-20 in numerals and words (spelled correctly) read and begin to write multiples of 10 to at least 100 in numerals and in words e.g. forty            M            compare and order numbers in steps of one from 0 up to 100            F  <b>Addition and Subtraction</b>            Add and subtract numbers using concrete</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            Identify, represent and estimate numbers using different representations, including physical, pictorial, a 1-20 number line and a hundred square.            F            use place value and number facts to solve problems            PS  <b>Addition and Subtraction</b>            solve word 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 (including column method)</li> </ul>           Using physical and</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            Revisit counting in steps of 2, and 5 from 0 and from any number forward, count in steps of 3 from 0, and tens from any number, forward or backward            F            recognise the place value of each digit in a two-digit number (tens, ones) using a place value chart.            PS            read and write numbers with tens and ones to at least 100 in numerals and in words e.g. forty-five            F  <b>Addition and Subtraction</b>            Embed adding and subtracting numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, and two two-digit numbers e.g. 34+29 adding three one-digit numbers e.g. 6 + 5 + 4            F            recall and use addition and subtraction facts to 20 fluently, and derive</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            Identify, represent and estimate numbers using different representations, including a 1-50 number line, pictorial, and a hundred square.            F            compare and order numbers in steps from 0 up to 100; use &lt;, &gt; and = signs            F            use place value and number facts to solve word problems.            PS            partition numbers in different ways e.g. <math>23 = 20 + 3 = 10 + 13</math>            F  <b>Addition and Subtraction</b>            Recognising and selecting a method to solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures            PS            applying their increasing knowledge of mental and</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            count in steps of 3 from 0, and steps of 2, 5 and 10 from any number, forward or backward            F            recognise the place value of each digit in a two-digit number (tens, ones)            R            read and write numbers to at least 100 in numerals and in words (spelled correctly) e.g. forty-five            F  <b>Addition and Subtraction</b>            Embed recognising and selecting a method to solve reasoning problems add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones            M            a two-digit number and tens            two two-digit numbers e.g. 34+29 adding three one-digit numbers e.g. 6</p>	<p><b>NUMBER</b>  <b>Number and Place Value</b>            Embed with mastery identifying, representing, and estimating numbers using different representations introduced throughout the year.            M            compare and order any numbers from 0 up to 100; use &lt;, &gt; and = signs            F            use place value and number facts to solve reasoning problems.            M            partition numbers in different ways e.g. <math>23 = 20 + 3 = 10 + 13</math>            PS  <b>Addition and Subtraction</b>            Embed reasoning and problem solving within addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods            M</p>
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<p>objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>o a two-digit number and ones</li> <li>o a two-digit number and tens e.g. <math>87 - 30 = 57</math></li> </ul> <p>F</p> <p>Begin to recall and use addition and subtraction facts to 20, e.g. <math>19 - 7 = 12</math> and derive and use related facts up to 100 e.g. <math>30 = 90 - 60</math></p> <p>F</p> <p><b>Multiplication and Division</b></p> <p>Using physical and pictorial resources, show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> <p>PS</p> <p><b>MEASUREMENT</b></p> <p>choose and use appropriate standard units to estimate and measure <b>length/height</b> in any direction (m/cm) to the nearest appropriate unit, using rulers</p>	<p>pictorial resources recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.</p> <p>PS</p> <p>Using physical and pictorial resources show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p> <p>R</p> <p><b>Multiplication and Division</b></p> <p>begin to recall and use multiplication and division facts for the 2, and 10 multiplication tables, including recognising odd and even numbers e.g. <math>22 \div 2 = 11</math></p> <p>F</p> <p>calculate mathematical statements for multiplication and division within the 2, 5 and 10 multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and</p>	<p>and use related facts up to 100</p> <p>F</p> <p><b>Multiplication and Division</b></p> <p>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> <p>PS</p> <p>Embed recognising and using the inverse relationship between multiplication and division in calculations</p> <p>R</p> <p>Solve word problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</p> <p>PS</p> <p><b>Measurement</b></p> <p>Embed recognition and use of symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>PS</p>	<p>written methods</p> <p>R</p> <p>Embed recognising and using the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.</p> <p>R</p> <p>use the language 'sum' and 'difference' e.g. find two numbers with a difference of 6 (3 and 9, 10 and 16..).</p> <p>R</p> <p><b>Multiplication and Division</b></p> <p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>R</p> <p>Embed calculating mathematical statements for multiplication and division within the 2, 5, and 10 multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</p> <p>PS</p>	<p>+ 5 + 4</p> <p>F</p> <p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100, to solve reasoning and word problems.</p> <p>PS</p> <p><b>Multiplication and Division</b></p> <p>Embed showing that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot, and use this fact to solve reasoning problems.</p> <p>PS</p> <p>recognise and use the inverse relationship between multiplication and division in calculations</p> <p>R</p> <p>Embed solving reasoning problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to solve reasoning problems, check calculations and missing number problems.</p> <p>R</p> <p>Embed use of the language 'sum' and 'difference' e.g. find two numbers with a difference of 6 (3 and 9, 10 and 16..).</p> <p>M</p> <p><b>Multiplication and Division</b></p> <p>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>R</p> <p>calculate mathematical statements for multiplication and division within the 2, 5, 10, and 3 multiplication tables, in and out of order, and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</p>
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	<p>PS</p> <p>compare and sequence familiar intervals of time</p> <p>R</p> <p>tell and write the time quarter past/to the hour and draw the hands on a clock face to show these times e.g. draw the hands on a clock face to show <math>\frac{1}{4}</math> to 6, making sure the hour hand is located correctly</p> <p>PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line</p> <p>F</p> <p>draw lines and shapes using a straight edge</p> <p>F</p> <p><b>Position and Direction</b> order and arrange combinations of mathematical objects in patterns, including those in different orientations e.g. a turning shape,</p>	<p>equals (=) signs</p> <p>PS</p> <p>Using physical, pictorial and written representations, recognise and use the inverse relationship between multiplication and division in calculations</p> <p>R</p> <p>relate multiplication and division to grouping and sharing discrete(e.g. counters and continuous quantities e.g. water</p> <p>PS</p> <p>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts e.g. share 18 counters between 3 children</p> <p>M</p> <p><b>Fractions</b> recognise, 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 shape</p> <p>F</p>	<p>Embed finding different combinations of coins to equal the same amounts of money</p> <p>R</p> <p>solve word problems in a practical context involving addition and subtraction of money of the same unit including giving change e.g. I buy 2 bags of sweets for 20p each, how much change will I get from 50p?</p> <p>PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Embed identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line</p> <p>F</p> <p>Embed drawing lines and shapes using a straight edge</p> <p>F</p> <p>Embed identifying and describing the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>PS</p>	<p>Solve word problems relating multiplication and division to grouping and sharing discrete e.g. counters and continuous quantities e.g. water, and relating these to fractions and measures e.g. <math>40\text{cm} \div 2 = 20\text{cm}</math>; 20cm is <math>\frac{1}{2}</math> of 40cm</p> <p>PS</p> <p>solve reasoning problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p>PS</p> <p><b>Fractions</b> 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 e.g. how long is <math>\frac{1}{3}</math> of a ribbon which is 60 cm long?</p> <p>F</p> <p>write simple fractions e.g. <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of two quarters and one half.</p> <p>F</p>	<p>problems in contexts</p> <p>PS</p> <p><b>Measurement</b> Consistently recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>R</p> <p>Solve word problems, finding different combinations of coins to equal the same amounts of money</p> <p>M</p> <p>solve reasoning problems in a practical context involving addition and subtraction of money of the same unit including giving change e.g. I buy 2 bags of sweets for 20p each, how much change will I get from 50p?</p> <p>M</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Use reasoning to identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line</p> <p>R</p> <p>draw lines and shapes using a straight edge</p>	<p>PS</p> <p>Solve reasoning problems relating multiplication and division to grouping and sharing discrete e.g. counters and continuous quantities e.g. water, and relating these to fractions and measures e.g. <math>40\text{cm} \div 2 = 20\text{cm}</math>; 20cm is <math>\frac{1}{2}</math> of 40cm</p> <p>PS</p> <p>Embed solving word and reasoning problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p>M</p> <p><b>Fractions</b> Within word and reasoning problems, 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 e.g. how long is <math>\frac{1}{3}</math> of a ribbon which is 60 cm long?</p> <p>R</p> <p>Embed writing simple fractions e.g. <math>\frac{1}{2}</math> of 6 = 3</p>
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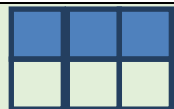
<p>draw the next shape in the pattern</p>  <p>PS</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> interpret and begin to construct simple pictograms, tally charts, block diagrams and simple tables F answer simple questions by counting the number of objects in each category and sorting the categories by quantity PS Answer questions about totalling and comparing categorical data. M</p>	<p><b>MEASUREMENT</b> compare and order lengths and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> F recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value F find different combinations of coins to equal the same amounts of money e.g. find different ways to make 25p PS solve simple problems in a practical context involving addition and subtraction of money of the same unit including giving change e.g. I buy a toy for £14; how much change do I get from £20? PS Embed telling and writing the time quarter past/to the hour and draw the hands on a clock face to show these times e.g. draw the hands on a clock face to show <math>\frac{1}{4}</math> to 6, making sure the hour</p>	<p><b>STATISTICS</b> <b>Use and interpret data</b> interpret and construct simple pictograms e.g. where the symbol represents 2, 5 or 10 units, tally charts, block diagrams and simple tables F Embed answering simple questions by counting the number of objects in each category and sorting the categories by quantity M</p> <p><b>Maths Week</b> <b>Collecting, recording and representing data in block graphs and pictograms to show results. (R)</b> <b>(Maths Week)</b> M</p> <p><b>Financial Literacy</b> <b>Profit and Loss (R)</b></p> <p><b>Times Tables expected to be achieved by end of T3:</b> 2s, 5s, 10s.</p>	<p>count in fractions e.g. 0, <math>\frac{1}{2}</math>, 1, <math>1\frac{1}{2}</math>, 2, <math>2\frac{1}{2}</math>, ... F</p> <p><b>Measurement</b> compare and order lengths, masses and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> F choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); and <b>mass</b> (kg/g) to the nearest appropriate unit, using rulers, scales R compare and sequence unfamiliar intervals of time PS 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. PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Embed comparing and sorting, including reasoning, common 2-D and 3-D shapes and</p>	<p>F Use reasoning to identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces R</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> Use reasoning to interpret and construct simple pictograms e.g. where the symbol represents 2, 5 or 10 units, tally charts, block diagrams and simple tables M Answering reasoning questions by counting the number of objects in each category and sorting the categories by quantity R</p>	<p>and recognise the equivalence of two quarters and one half. R count in fractions e.g. 0, <math>\frac{1}{2}</math>, 1, <math>1\frac{1}{2}</math>, 2, <math>2\frac{1}{2}</math>, ... including use of equivalent fractions F</p> <p><b>Measurement</b> Embed comparing and ordering lengths, masses and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> M choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); <b>mass</b> (kg/g) to the nearest appropriate unit, using rulers, scales R compare and sequence intervals of time through reasoning and world problems. PS Embed telling and writing the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. M</p>
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		<p>hand is located correctly M</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> identify and describe the properties of 3-D shapes, including the number of vertices and faces using physical representations F compare and sort common 2-D and 3-D shapes and everyday objects e.g. sort 3-D shapes in different ways such as whether they have triangular faces, all straight edges... PS recognise and name, polygons e.g. pentagon, hexagon, octagon and cones PS</p>		<p>everyday objects e.g. sort 3-D shapes in different ways such as whether they are prisms, whether they have more than 8 edges... PS recognise and name quadrilaterals, polygons e.g. pentagon, hexagon, octagon, prisms and cones R identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid PS</p> <p><b>GEOMETRY</b> <b>Position and Direction</b> order and arrange combinations of mathematical objects in patterns, including those in different orientations M use mathematical vocabulary to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise</p>		<p><b>GEOMETRY</b> <b>Properties of Shapes</b> Embed using reasoning to compare and sort common 2-D and 3-D shapes and everyday objects e.g. sort 3-D shapes in different ways such as whether they are prisms, whether they have more than 8 edges... M recognise and name quadrilaterals, polygons e.g. pentagon, hexagon, octagon, prisms and cones R Embed using reasoning to identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid M</p> <p><b>GEOMETRY</b> <b>Position and Direction</b> Use reasoning to order and arrange combinations of mathematical objects in patterns, including those in different orientations PS Embed use of mathematical vocabulary</p>
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				<p>and anti-clockwise), and movement in a straight line. M Use the concept and language of angles to describe 'turn' by applying rotations, including in practical contexts (e.g. pupils themselves moving in turns, giving instructions to other pupils to do so, and programming robots using instructions given in right angles) PS</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> Embed answering questions about totalling and comparing categorical data using reasoning skills. M</p>		<p>and reasoning to describe position, direction and movement, including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise), and movement in a straight line. PS Use the concept and language of angles to describe 'turn' by applying rotations, including in practical contexts (e.g. pupils themselves moving in turns, giving instructions to other pupils to do so, and programming robots using instructions given in right angles) R</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> Embed answering reasoning questions about totalling and comparing categorical data. M</p>
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						<b>Sports Week:</b> Creating bar charts using data collected using tallies from the class' favourite sports <b>M</b>
<b>Year 3</b>	<p><b>NUMBER</b></p> <p><b>Number and Place Value</b>          Count from 0 in multiples of 4, 50 and 100; find 10 or 100 more or less than a given number under 500 e.g. 10 more than 395          F</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)          M</p> <p>Identify, represent and estimate numbers using partitioning          F</p> <p>Read and write numbers to at least 1000 in numerals          F</p> <p>Compare and order numbers up to 1000 starting with the smallest          R</p> <p><b>Addition and Subtraction</b>          Add and subtract numbers mentally, including:</p>	<p><b>NUMBER</b></p> <p><b>Number and Place Value</b>          Apply partitioning related to place value using varied and increasingly complex problems e.g. <math>146 = 100</math> and 40 and 6, <math>146 = 130</math> and 16          F</p> <p>Solve number problems and practical problems involving place value and rounding.          PS</p> <p><b>Addition and Subtraction</b>          Add and subtract numbers with up to three digits using partitioning          F</p> <p>Estimate the answer to a calculation involving addition          R</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction e.g. investigate the numbers</p>	<p><b>NUMBER</b></p> <p><b>Number and Place Value</b>          Recap counting from 0 in multiples of 4, 50 and 100; Count from 0 in multiples of 8; find 10 or 100 more or less than a number between 500-750          F</p> <p>Revisit the place value of each digit in a three-digit number (hundreds, tens, ones)          F</p> <p>Identify, represent and estimate numbers using different representations e.g. using place value cards to show <math>985 = 900 + 80 + 5</math>; tally marks; base 10 apparatus          R</p> <p>Apply partitioning related to place value          F</p> <p>Read and write numbers to at least 1000 in words e.g. three hundred and forty-six          F</p>	<p><b>NUMBER</b></p> <p><b>Addition and Subtraction</b>          Revisit adding and subtracting numbers mentally, including: a three-digit number and ones          a three-digit number and tens e.g. <math>476 + 50</math>          Add and subtract a three-digit number and hundreds          F</p> <p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition          F</p> <p>Estimate the answer to a calculation involving subtraction          R</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction e.g. There are 46 boys and 58 girls in Year 3, but 12</p>	<p><b>NUMBER</b></p> <p><b>Number and Place Value</b>          Count from any number in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a number between 750-999          F</p> <p>Revisit the place value of each digit in a three-digit number (hundreds, tens, ones) and use reasoning skills to solve problems          F</p> <p>Apply partitioning related to place value using varied and increasingly complex problems          M</p> <p>Read and write numbers to at least 1000 in numerals and in words          F</p> <p>Revisit comparing and ordering numbers up to 1000 starting with the smallest or largest          PS</p> <p>Use reasoning skills to solve problems involving</p>	<p><b>NUMBER</b></p> <p><b>Addition and Subtraction</b>          Add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction          F</p> <p><b>MEASUREMENT</b>  <b>Measurement</b>          measure, compare, add and subtract: length (m/cm/mm); mass (kg/g); volume/capacity (l/ml) e.g. Read 300ml on a scale labelled every 200ml. Order a set of containers by capacity, using a measuring jug and water to check. Know the approximate capacity of a cup, a jug, a bucket...          PS</p> <p>add and subtract amounts of money to give change, using both £ and p in practical contexts e.g. Ali is saving</p>

<p>o a three-digit number and ones o a three-digit number and tens F</p> <p><b>Fractions</b> Count up and down in tenths F Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators e.g. find <math>\frac{1}{3}</math> of 9 beads, then <math>\frac{2}{3}</math> of 9 beads F Understand the relation between unit fractions as operators (fractions of), and division by integers e.g. to find <math>\frac{1}{3}</math>, you divide by 3; to find <math>\frac{1}{5}</math>, you divide by 5 PS Recognise and use fractions as numbers on the number line: unit fractions with small denominators F Recognise and show, using diagrams, equivalent fractions with small denominators e.g. <math>\frac{1}{2} = \frac{3}{6}</math></p>	<p>which could go in the boxes when <math>2 \times = 7 +</math> PS</p> <p><b>Multiplication and Division</b> Recall and use multiplication and division facts for the 3 and 4 multiplication tables F Develop efficient mental methods, for example, using commutativity e.g. <math>2 \times 7 \times 5 = 2 \times 5 \times 7 = 10 \times 7 = 70</math> and multiplication and division facts to derive related facts e.g. using <math>3 \times 2 = 6</math>, <math>6 \div 3 = 2</math> and <math>2 = 6 \div 3</math> to derive <math>30 \times 2 = 60</math>, <math>60 \div 3 = 20</math> and <math>20 = 60 \div 3</math> F 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 methods e.g. <math>22 \times 3</math> R Solve problems, including</p>	<p>Compare and order numbers up to 1000 starting with the largest R Revisit solving number problems and practical problems involving place value and rounding PS</p> <p><b>Multiplication and Division</b> Revisit, recall and use multiplication and division facts for the 3 and 4 multiplication tables F Recall and use multiplication and division facts for the 8-multiplication table F 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 e.g. <math>34 \times 5</math> or <math>64 \div 4</math> M</p>	<p>children are away; how many Year 3 children are at school? PS</p> <p><b>Multiplication and Division</b> Recap developing efficient mental methods, for example, using commutativity and multiplication and division facts to derive related facts F Solve problems, including missing number problems, involving multiplication and division e.g. <math>240 = \times 4</math></p> <p><b>MEASUREMENT</b> Recap telling and writing the time from an analogue clock, and introduce using Roman numerals from I to XII, and 12-hour digital clocks PS Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m.,</p>	<p>place value and rounding R</p> <p><b>Addition and Subtraction</b> Revisit adding and subtracting numbers mentally, including: a three-digit number and ones a three-digit number and tens e.g. <math>824 - 30</math> a three-digit number and hundreds Add and subtract two-digit numbers where the answer could exceed 100 e.g. <math>68 + 47</math> F Estimate the answer to a calculation and use inverse operations to check answers e.g. <math>702 - 249</math> is approximately 700 <math>- 250 = 450</math>; check <math>453 + 249 = 702</math> PS Revisit solving problems, including missing number problems, using number facts, place value, and more complex addition and subtraction e.g. investigate the numbers which could go in the boxes PS</p>	<p>80p each week, to buy a toy costing £5; how many weeks will it take him? R Add and subtract amounts of money to give change, using both £ and p in practical contexts e.g. Ali is saving 80p each week, to buy a toy costing £5; how many weeks will it take him? PS Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour digital clocks R estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight R Compare durations of events, for example to calculate the time taken by particular events or tasks. M</p>
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PS

Solve word problems that involve fractions e.g. Amy ate  $\frac{1}{4}$  of her 12 sweets and Ben ate  $\frac{1}{2}$  of his 8 sweets, who ate more sweets?

M

### GEOMETRY

#### Properties of Shape

Draw 2-D shapes and describe them e.g. number of sides and vertices.

R

#### Competency: Time Facts

missing number problems, involving multiplication and division e.g.  $90 = 3 \times M$

### MEASUREMENT

Measure, compare, add and subtract: length (m/cm/mm) e.g. how much ribbon is left when 36cm is cut from 1m? Which is longer: 6 $\frac{1}{2}$ cm or 62mm? 5m or 450cm? Measure and draw lines to the nearest  $\frac{1}{2}$  cm. Know the approximate length of a book, a room, a handspan...

R

Add and subtract amounts of money to give change, using both £ and p in practical contexts e.g. I buy 2 packs of sweets for 75p each; how much change will I get from £2?

PS

Tell and write the time from an analogue clock e.g. draw hands on a clock face to show 'ten to four', making sure the hour hand is located correctly

R

### Fractions

Recap on counting 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 e.g. 3 cakes shared between 10 children gives  $\frac{3}{10}$  each.

R

Connect tenths to place value, decimal measures and to division by 10 e.g.  $\frac{7}{10} = 0.7$

M

Solve word problems involving fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators e.g. there are 8 marbles and three of them are red; what fraction of the marbles are red?

PS

Understand the relation between unit fractions as operators (fractions of), and division by integers e.g. to find  $\frac{1}{3}$ , you divide by 3; to find  $\frac{1}{5}$ , you divide by 5

F

Revisit recognising and

morning, afternoon, noon and midnight

R

Use practical activities to compare durations of events, for example to calculate the time taken by particular events or tasks.

PS

Know the number of seconds in a minute and the number of days in each month, year and leap year

R

### STATISTICS

#### Use and Interpret Data

Interpret and present data using pictograms and tables, understanding and using simple scales e.g. 2, 5, 10 units per cm with increasing accuracy.

PS

Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in pictograms and tables.

PS

Interpret data presented in many contexts

R

### Multiplication and Division

Recap and use multiplication and division facts for the 3, 4 and 8 multiplication tables

F

Recap developing efficient mental methods, for example, using commutativity e.g.  $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$  and multiplication and division facts to derive related facts

F

Recap writing and calculating 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 e.g.  $46 \times 8$  or  $81 \div 3$

F

Solve word problems, including missing number problems, involving multiplication and division, including integer

Know the number of seconds in a minute and the number of days in each month, year and leap year

M

### GEOMETRY

#### Properties of Shapes

Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them

R

Recognise that angles are a property of shape or a description of turn

R

Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

PS

Describe the properties of shapes using accurate language, including symmetrical/not symmetrical, lengths of lines, and acute and obtuse angles



		<p>Record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight R</p> <p>Compare durations of events, for example to calculate the time taken by particular events or tasks M</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Interpret and present data using bar charts, understanding and using simple scales e.g. 2, 5, 10 units per cm with increasing accuracy. PS</p> <p>Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar chart. R</p> <p>Interpret data presented in many contexts M</p> <p><b>Competency: 2D Shapes</b> M</p>	<p>using fractions as numbers on the number line: unit fractions and non-unit fractions with small denominators F</p> <p>Recognise and show, using diagrams, equivalent fractions with larger denominators F</p> <p>Compare and order unit fractions, and fractions with the same denominators e.g. put in order <math>\frac{3}{8}</math>, <math>\frac{1}{8}</math>, <math>\frac{7}{8}</math>, <math>\frac{5}{8}</math> F</p> <p>Solve word problems that involve fractions PS</p> <p><b>MEASUREMENT</b> Measure, compare, add and subtract: length (m/cm/mm) mass (kg/g) e.g. find 3 vegetables which weigh between 100g and 300g. Read 250g on a scale labelled every 100g. Which is heavier: 1kg 300g or <math>1\frac{1}{2}</math>kg? Know the approximate mass of a book, an apple, a baby, a man... PS</p> <p>Complete reasoning</p>	<p><b>GEOMETRY</b> <b>Properties of Shapes</b> Draw 3-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them PS</p> <p>Recognise that angles are a property of shape or a description of turn R</p> <p>Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle PS</p> <p>Describe the properties of shapes using accurate language, including symmetrical/not symmetrical, lengths of lines, and acute and obtuse angles e.g. sort triangles into those with an obtuse angle and those without R</p>	<p>scaling problems (e.g. change a recipe for 2 people to make enough for 6 people) and correspondence problems in which n objects are connected to m objects. e.g. 3 hats and 4 coats, how many different outfits? Or Share 6 cakes equally between 4 children.</p> <p><b>Fractions</b> Recap counting 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 F</p> <p>Recap connecting tenths to place value and decimal measures (not restricted to decimals between 0 and 1) and to division by 10 e.g. <math>\frac{13}{10} = 1.3</math> F</p> <p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with larger denominators e.g. find <math>\frac{5}{8}</math> of 48</p>	<p>R</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines M</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Interpret and present data using bar charts, pictograms and tables, understanding and using simple scales e.g. 2, 5, 10 units per cm with increasing accuracy. R</p> <p>Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables. PS</p> <p>Interpret data presented in many contexts PS</p>
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			<p>problems to add and subtract amounts of money to give change, using both £ and p in practical contexts e.g. I have a £2 coin, two £1 coins, three 50p coins, a 20p and seven 5p coins; how much more do I need to make £10? M</p> <p><b>Maths Week</b> <b>Create a line graph (R)</b> <b>Financial Literacy</b> <b>Profit and Loss</b> M</p> <p><b>Competency: 3D Shapes</b> M</p>	<p><b>Competency: Fractions of Amounts</b> M</p>	<p>F</p> <p>Understand the relation between unit fractions as operators (fractions of), and division by integers e.g. to find <math>\frac{1}{3}</math>, you divide by 3; to find <math>\frac{1}{5}</math>, you divide by 5</p> <p>PS</p> <p>Recap on recognising and using fractions as numbers on the number line: unit fractions and non-unit fractions with small denominators</p> <p>Recap and recognise and show, using diagrams, equivalent fractions with small and large denominators</p> <p>PS</p> <p>Add and subtract fractions with the same denominator within one whole e.g. If <math>\frac{1}{3}</math> of a cake is eaten then <math>\frac{2}{3}</math> remains or <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math></p> <p>M</p> <p>Compare and order unit fractions, and fractions with the different denominators e.g. put in order <math>\frac{1}{2}</math>, <math>\frac{1}{8}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{6}</math></p> <p>F</p> <p>Solve word problems that involve fractions e.g. Ali,</p>	<p><b>Sports Week:</b> <b>Creating line graphs with own data i.e. distances recorded from javelin throws.</b> M</p> <p><b>Competency: Roman Numerals</b> M</p>
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					<p>Ben and Cara have 24 fish. <math>\frac{2}{3}</math> of them belong to Ali, <math>\frac{1}{4}</math> belong to Ben and the rest belong to Cara; how many fish belong to Cara? R</p> <p><b>MEASUREMENT</b> measure the perimeter of simple 2-D shapes e.g. measure accurately the sides of a triangle in cm or mm, in order to find the perimeter PS</p> <p><b>Competency: Equivalent Fractions</b> M</p>	
<b>Year 4</b>	<p><b>NUMBER</b> <b>Number and Place Value</b> Find 1000 more or less than a given number e.g. <math>45 + 1000</math>, <math>8904 - 1000</math> F Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) F Order and compare numbers beyond 1000 starting with the smallest number in a sequence R</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Count in multiples of 6, 9, 25 and 1000 e.g. 625, 600, 575, 550, 525, 500 ... F Round any number to the nearest 10 or 100 F Solve number and practical problems that involve place value and rounding and with increasingly large positive numbers PS</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Count in multiples of 6, 7, 9, 25 and 1000 F Find 1000 more or less than a given number up to and including 5000. F Count backwards through zero to include negative numbers e.g. 8, 6, 4, 2, 0, -2, -4, -6... F Revisit the place value of each digit in a four-digit number (thousands,</p>	<p><b>NUMBER</b> <b>Multiplication and Division</b> Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math> F <b>Fractions (Including decimals)</b> Know that decimals and fractions are different ways of expressing proportions, making links between decimals and fractions</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Solve word problems involving counting in multiples of 6, 7, 9, 25 and 1000 PS Find 1000 more or less than a given number up to 9999. F Solve reasoning problems, counting backwards through zero to include negative numbers R</p>	<p><b>NUMBER</b> <b>Multiplication and Division</b> Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math> F <b>Fractions (including decimals)</b> Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit</p>

<p>Learn Roman Numerals to 30 F</p> <p><b>Multiplication and Division</b></p> <p>Recall multiplication and division facts for multiplication tables up to <math>10 \times 10</math> F</p> <p><b>Fractions (including decimals)</b></p> <p>Know that decimals are ways of expressing proportions R</p> <p>Recognise and show, using diagrams, families of common equivalent fractions for halves, quarters and tenths R</p> <p>Count using simple fractions and decimal fractions, forwards and represent fractions and decimals on a number line F</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten</p>	<p><b>Addition and Subtraction</b></p> <p>Use both mental and written methods with increasingly large numbers to aid fluency e.g. mentally calculate <math>540 + 400</math> or <math>900 - 360</math> F</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate F</p> <p>Solve addition and subtraction two-step problems in contexts, involving money, deciding which operations and methods to use and why e.g. It costs £3.50 for Ben to go swimming and £5:70 for his mum; how much change is there from £10? PS</p> <p><b>Multiplication and Division</b></p> <p>Use place value (H, T,O), known and derived facts to multiply and divide mentally, including:</p>	<p>hundreds, tens, and ones) using partitioning. F</p> <p>Solve problems rounding any number to the nearest 10 or 100 PS</p> <p>Recap solving number and practical problems that involve place value and rounding and with increasingly large positive numbers PS</p> <p><b>Addition and Subtraction</b></p> <p>Use both mental and written methods with increasingly large numbers to solve real life problems PS</p> <p>Solve word problems adding and subtracting numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate PS</p> <p>Estimate and use inverse operations to check answers to a calculation R</p> <p>Solve addition and subtraction two-step</p>	<p>M</p> <p>Recognise and show, using diagrams, families of common equivalent fractions including thousandths R</p> <p>Count using simple fractions and decimal fractions, and backwards and represent fractions and decimals on a number line F</p> <p>Complete word problems counting up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten PS</p> <p>Solve word problems including equivalent fractions of a given fraction, including tenths and hundredths PS</p> <p>Solve reasoning problems to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number e.g. What fraction of a day is 3 hours?</p>	<p>Revisit the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) and answer reasoning problems involving place value F</p> <p>Order and compare numbers beyond 1000 starting with the largest number in a sequence. R</p> <p>Identify, represent and estimate numbers using different representations including measures and measuring instruments R</p> <p>Round any number to the nearest 10, 100 or 1000 F</p> <p>Complete reasoning problems that involve place value and rounding and with increasingly large positive numbers R</p> <p><b>Addition and Subtraction</b></p> <p>Recap both mental and written methods with increasingly large numbers to aid fluency. F</p> <p>Solve reasoning problems adding and subtracting</p>	<p>fractions where the answer is a whole number PS</p> <p>Solve reasoning problems involving fractions. PS</p> <p>Count using simple fractions and decimal fractions, both forwards and backwards and represent fractions and decimals on a number line F</p> <p>Solve reasoning problems counting up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten PS</p> <p>Add and subtract fractions with the same denominator e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5}</math> F</p> <p>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 e.g. <math>\frac{1}{5}</math> of X is 9</p>
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## Lowbrook Academy

## Maths Overview

<p>e.g. <math>3/10 = 30/100 = 0.30 = 0.3</math> F</p> <p>Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths e.g. <math>6/9 = 2/3</math> F</p> <p>Solve problems to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number e.g. find <math>4/9</math> of 18 counters PS</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths e.g. <math>9/10 = 0.9</math>; <math>9/100 = 0.09</math> F</p> <p>Recognise and write decimal equivalents to <math>1/4</math>; <math>1/2</math>; <math>3/4</math> F</p> <p>Find the effect of dividing a one- or two-digit number by 10, identifying the value of the digits in the answer as units, tenths and hundredths PS</p>	<p>multiplying by 0 and 1; dividing by 1; multiplying together three numbers e.g. <math>600 \div 3 = 200</math>; <math>4 \times 6 \times 2</math> F</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout (see appendix) F</p> <p>solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit e.g. <math>34 \times 6 = (30 \times 6) + (4 \times 6)</math>, integer scaling problems and harder problems such as n objects are connected to m objects e.g. 3 skirts and 4 tops, how many different outfits? PS</p> <p><b>MEASUREMENT</b> Convert between different units of measure (e.g. kilometre to metre; hour to minute) e.g. <math>4\frac{1}{2}\text{kg} = 4500\text{g}</math>; F</p>	<p>problems in contexts, involving time, deciding which operations and methods to use and why PS</p> <p><b>Multiplication and Division</b> Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math> F</p> <p>Use place value (Th, H, T, O), known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers e.g. <math>420 = 70 \times 6</math>; <math>5 \times 4 \times 9</math> F</p> <p>Recognise and use factor pairs and commutativity in mental calculations e.g. factor pairs of 20 are 1 and 20, 2 and 10, 4 and 5; addition and multiplication are commutative e.g. <math>2 \times 6 \times 5 = 2 \times 5 \times 6 = 10 \times 6</math> F</p> <p>Solve word problems multiplying two-digit and three-digit numbers by a one-digit number using</p>	<p>R</p> <p>Answer word problems involving decimal equivalents of any number of tenths or hundredths PS</p> <p>Solve problems including decimal equivalents to <math>1/4</math>; <math>1/2</math>; <math>3/4</math> PS</p> <p>Find the effect of dividing a one- or two-digit number by 100, identifying the value of the digits in the answer as units, tenths and hundredths PS</p> <p>Round decimals with one decimal place to the nearest whole number e.g. 32.5 rounds to 33; 49.7 rounds to 50 F</p> <p>Compare numbers with the same number of decimal places up to two decimal places e.g. put in order: 2.56, 26.52, 2.65, 25.62, 2.62 R</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places. e.g. two parcels</p>	<p>numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate R</p> <p>Revisit how to estimate and use inverse operations to check answers to a calculation PS</p> <p>Solve addition and subtraction two-step problems in contexts, involving measurements, deciding which operations and methods to use and why e.g. Mr Smith sets out on a 619 mile journey; he drives 320 miles before lunch and 185 miles after lunch; how much farther does he need to drive? PS</p> <p><b>Multiplication and Division</b> Solve reasoning problems involving multiplication and division facts for multiplication tables up to <math>12 \times 12</math> R</p> <p>use place value (Th, H, T, O, th), known and</p>	<p>M</p> <p>Create word problems writing decimal equivalents of any number of tenths or hundredths M</p> <p>Revisit solving problems involving decimal equivalents to <math>1/4</math>; <math>1/2</math>; <math>3/4</math> PS</p> <p>Solve reasoning problems finding the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths R</p> <p>Round decimals with one decimal place to the nearest whole number F</p> <p>Compare numbers with the same number of decimal places up to two decimal places R</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places e.g. Ben buys a toy costing £4.55 and <math>\frac{1}{4}</math> kg of sweets costing £3.20 per</p>
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	<p><b>GEOMETRY</b> <b>Position and Direction</b> Describe positions on a 2-D grid as coordinates in the first quadrant R Plot specified points and draw sides to complete a given polygon PS</p> <p><b>Competencies</b> Roman Numerals 2D shapes (F) M</p>	<p>Estimate, compare and calculate different measures, including money in pounds and pence e.g. put in order: £1.20, 98p, £0.89, £1.08 R Telling the time 'am' and 'pm' to the nearest minute in both analogue and clocks PS Use 'am' and 'pm' appropriately. R Calculate time intervals crossing the hour using analogue and digital. F</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Compare and classify geometric shapes, including quadrilaterals (e.g. parallelogram, rhombus, trapezium) and triangles (e.g. isosceles, equilateral, scalene), based on their properties and sizes e.g. sort triangles to find those that are isosceles and/or have a right angle R Complete a simple symmetric figure with</p>	<p>formal written layout  Use the formal written method for short division with exact answers when dividing by a one-digit number e.g. <math>456 \div 3</math> F Revisit solving problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit e.g. <math>34 \times 6 = (30 \times 6) + (4 \times 6)</math>, integer scaling problems and harder correspondence problems such as 'n' objects are connected to 'm' objects e.g. the number of different choices on a menu R</p> <p><b>MEASUREMENT</b> Read, write and convert time between analogue and digital 12 and 24-hour clocks for quarter past, half past and quarter to the hour PS Solve problems involving converting from hours to minutes; minutes to seconds;</p>	<p>weigh 5.5kg altogether, one weighs 3.8kg, what is the mass of the other? PS</p> <p><b>MEASUREMENT</b> Solve word problems converting between different units of measure (e.g. kilometre to metre; hour to minute) e.g. 90 minutes = <math>1\frac{1}{2}</math> hours PS Solve word problems estimating, comparing and calculating different measures, including money in pounds and pence PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Compare and classify geometric shapes, including quadrilaterals identifying angles (e.g. parallelogram, rhombus, trapezium) and triangles (e.g. isosceles, equilateral, scalene), based on their properties and sizes e.g. sort quadrilaterals to find those with line symmetry or parallel edges</p>	<p>derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers e.g. <math>640 \div 8 = 80</math>; <math>4 \times 6 \times 20</math> F Solve problems that use factor pairs and commutativity in mental calculations PS Multiply two-digit and three-digit numbers by a multiple of 10, using formal written layout F Solve worded problems using the formal written method for short division with exact answers when dividing by a one-digit number e.g. <math>736 \div 8</math> PS Solve real life problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit e.g. <math>34 \times 6 = (30 \times 6) + (4 \times 6)</math>, integer scaling problems and harder correspondence problems such as n objects are connected to</p>	<p>kilo; how much change does he receive from £10? PS</p> <p><b>MEASUREMENT</b> Convert between mixed units of measure (e.g. cm and mm to m) PS Revisit how to estimate, compare and calculate different measures, including money in pounds and pence e.g. put in order: 4.2kg, 4700g, <math>4\frac{1}{2}</math>kg, 490g R</p> <p><b>GEOMETRY</b> <b>Properties of Shape</b> Compare and classify geometric shapes, including regular and irregular quadrilaterals (e.g. parallelogram, rhombus, trapezium) and triangles (e.g. isosceles, equilateral, scalene), based on their properties and sizes R Create a regular shape, with more than 4 sides, including 2 lines of symmetry. R</p>
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		<p>respect to a horizontal and vertical line of symmetry PS</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Interpret and present discrete data using appropriate graphical methods, including bar charts, using a greater range of scales R Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs PS</p> <p><b>Competencies</b> Roman Numerals 2D &amp; 3D shapes M</p>	<p>PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Identify acute and obtuse angles and compare and order angles up to two right angles by size, without using a protractor R</p> <p><b>Position and Direction</b> Draw shapes on a 2-D grid as coordinates in the first quadrant R Plot specified points and draw sides to complete a given polygon. e.g. find the coordinates of the missing vertex of a shape R Describe movements between positions as translations of a given unit to the left/right and up/down R</p> <p><b>(Maths Week)</b> Introduction to excel spreadsheets and financial planning. Exploring formatting of cells and familiarisation of program. Creating</p>	<p>PS</p> <p>Complete a simple symmetric figure with respect to a horizontal, vertical and diagonal specific line of symmetry PS</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs, using a greater range of scales e.g. height of a sunflower plant, measured daily for 2 weeks R Present data for peers to analyse and solve problems using information presented in bar charts, pictograms, tables and other graphs R</p> <p><b>Times Table test</b> <b>Time facts</b> F</p>	<p>m objects e.g. 3 cakes shared equally between 10 children PS</p> <p><b>MEASUREMENT</b> Read, write and convert time between analogue and digital 12 and 24-hour clocks to the nearest minute R Solve problems involving converting from years to months; weeks to days. e.g. which of these children are 3 years old: Isabel 39 months Ben 32 months Cara 50 months Dylan 42 months PS Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres e.g. find the perimeter of an L-shape where the lengths are given or can be measured PS Find the area of rectilinear shapes by counting squares e.g. find the area of an L-shape drawn on squared paper</p>	<p>Identify acute and obtuse angles and compare and order angles up to two right angles by size, without using a protractor R Compare lengths and angles to decide if a polygon is regular or irregular. e.g. regular polygons have edges with the same lengths and angles all the same size e.g. a square is the only regular quadrilateral R</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs, using a greater range of scales. Analyse data and create questions for peers to solve. R Revisit presenting data for peers to analyse and solve problems using information presented in bar charts, pictograms, tables and other graphs</p>
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			<p>pictograms using scale on Purple Mash. <b>(Computing)</b> <b>(R)</b></p> <p><b>Financial Literacy</b> <b>Profit and Loss</b></p> <p><b>Competencies</b> Angles Measurement conversions (F)</p>		<p>PS</p> <p><b>Position and Direction</b> Translate shapes on a 2-D grid as coordinates in the first quadrant R Recap plotting specified points and draw sides to complete a given polygon. R Describe movements between positions as translations of a given unit to the left/right and up/down using four quadrants.</p> <p><b>Competencies</b> Equivalent fractions 3D shapes (F)</p>	<p>PS</p> <p><b>Identify lines of symmetry in 2-D shapes presented in different orientations</b> F</p> <p><b>Sports Week – Recording times and distances and comparing to famous athletes</b> <b>(PS) (R)</b> <b>Revise</b> Place Value – compare and order numbers up to 1000 F <b>Revise</b> times table knowledge up to 12 F <b>Revise</b> and problem solve using fractions PS <b>Revise</b> the 4 operations – mental and written methods F <b>Competencies</b> Revise Roman numerals up to 20 (F)</p>
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<p>Year 5</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit e.g. order a set of multi-digit numbers from smallest to largest - 37 700, 737 570, 737 507, 37 570 F Count forwards or backwards in steps of powers of 10 from any given number up to 1 000 000 e.g. 197 000, 198 000, 199 000, 200 000, 201 000... F Round any number up to 1 000 000 to the nearest 10, 100 and 1000 e.g. 265 946 to the nearest 1000 (266 000) F Solve number problems and practical problems that involve number, place value and rounding e.g. What number is halfway between 560 500 and 560 600? PS Revise Roman Numerals to 1000 and be able to calculate time using a</p>	<p><b>NUMBER</b> <b>Multiplication and Division</b> Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers F 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 F Multiply and divide numbers mentally drawing upon known facts e.g. <math>60 \times 9</math> F <b>Fractions (including decimals and percentages)</b> Know that percentages, decimals and fractions are different ways of expressing proportions F Count forwards and backwards in fractions and decimals bridging zero F Compare and order</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit e.g. what is the smallest integer you can make using all of these digits: 8, 1, 0, 5, 6? F Revisit counting forwards or backwards in steps of powers of 10 from any given number up to 1,000,000 F Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero e.g. count back in threes: 8, 5, 2, -1, -4, -7... F Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 F Solve number problems and practical problems that involve number, place value and rounding e.g. What is the largest 4-digit number whose</p>	<p><b>NUMBER</b> <b>Addition and Subtraction</b> Revisit add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Recap add and subtract numbers mentally with increasingly large numbers F Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy F Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why e.g. I bought some stickers on Monday; on Tuesday I bought 20 more than I bought on Monday; now I have 70; how many stickers did I buy on Monday? <b>PS</b></p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit e.g. What must be added to 37 500 to change it to 67 500? F Count forwards or backwards in steps of powers of 10 from any given number up to 1 000 000 F Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero F Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 F Solve number problems and practical problems that involve number, place value and rounding. e.g. The distance to the bus stop is 1km to the nearest 100m; what is the shortest distance it could be?</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. e.g. MCMXIV (1914) F <b>Multiplication and Division</b> Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors e.g. <math>828 \div 36 = (828 \div 4) \div 9 = 207 \div 9 = 23</math> PS Establish whether a number up to 100 is prime and recall prime numbers up to 19 F 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 F Multiply and divide numbers mentally drawing upon known facts e.g. <math>840 \div 12</math> F</p>
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<p>Roman Numeral clock F</p> <p><b>Addition and Subtraction</b> Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) F Add and subtract numbers mentally with increasingly large numbers e.g. <math>15\,400 - 2000 = 13\,400</math> F Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy R Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why e.g. I have read 124 of the 526 pages of my book; how many more pages must I read to reach the middle? PS</p>	<p>fractions whose denominators are all multiples of the same number e.g. put these fractions in order from the smallest: <math>\frac{5}{12}, \frac{5}{6}, \frac{11}{12}, \frac{2}{3}</math> R Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths making links to decimals and measures e.g. <math>\frac{37}{100}</math> metre = 0.37m F Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator hundred, and as a decimal fraction e.g. <math>43\% = \frac{43}{100} = 0.43</math> F Recognise that proportions of quantities e.g. 40% of the class are boys; what percentage are girls? As well as operators on quantities e.g. find 40% of 30</p>	<p>digits sum to 20? (9920). PS Recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule e.g. find the rule and complete the sequence: __, 16, 8, 4, __, 1, 0.5, __ (rule is: halve previous number) R</p> <p><b>Multiplication and Division</b> Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers F Establish whether a number up to 100 is prime and recall prime numbers up to 19 F Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 F Recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>)</p>	<p><b>Multiplication and Division</b> Continue to practise and apply multiplication tables and related division facts, committing them to memory and using them confidently to make larger calculations F Know and use the vocabulary of prime numbers and composite (non-prime) numbers 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 F Multiply and divide numbers mentally drawing upon known facts e.g. <math>630 \div 9</math> F 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 e.g. <math>98 \div 4 = 24 \text{ r } 2 = 24\frac{1}{2} = 24.5 \approx 25</math> F</p>	<p>PS Recap recognising and describing linear number sequences, including those involving fractions and decimals, and find the term-to-term rule e.g. find the rule and complete the sequence: __, 16, 8, 4, __, 1, 0.5, __ F</p> <p><b>Addition and Subtraction</b> Revisit adding and subtracting whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) F Add and subtract numbers mentally with increasingly large numbers e.g. <math>12\,462 - 2\,300 = 10\,162</math> Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy PS Solve addition and subtraction multi-step problems in contexts, deciding which</p>	<p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 F 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 F</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. e.g. a toymaker can make 8 toys in 2 hours; how many toys can he make in 5 hours? PS</p> <p><b>Fractions (including decimals and percentages)</b> Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths and extending to thousandths, making links to decimals and</p>
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<p><b>Multiplication and Division</b></p> <p>Continue to practise and apply multiplication tables and related division facts, committing them to memory and using them confidently to make larger calculations</p> <p>F</p> <p>Know and use the vocabulary of prime numbers and composite (non-prime) numbers</p> <p>F</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>F</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 e.g. <math>456 \div 100 = 4.56</math></p> <p>F</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign e.g. <math>40 \times 8 = 500 - \square</math></p> <p>PS</p>	<p>children.</p> <p>F</p> <p><b>MEASUREMENT</b></p> <p>Convert between different units of measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) e.g. <math>15.7\text{cm} = 157\text{mm}</math></p> <p>PS</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres e.g. find the perimeter of an L shape where one or two side lengths are not given</p> <p>PS</p> <p>Calculate and compare the area of squares and rectangles including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes</p> <p>R</p> <p><b>GEOMETRY</b></p> <p><b>Properties of Shapes</b></p> <p>Identify 3-D shapes, including tetrahedrons,</p>	<p>F</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign e.g. There are 6 shelves of books; 3 shelves hold 35 books each, one shelf holds 45 books and the top two shelves have the same number of books on each; there are 200 books altogether; how many books are on the very top shelf?</p> <p>PS</p> <p><b>Fractions (including decimals and percentages)</b></p> <p>Know that percentages, decimals and fractions are different ways of expressing proportions</p> <p>F</p> <p>Recap counting forwards and backwards in fractions and decimals bridging zero</p> <p>F</p> <p>Revisit comparing and order fractions whose denominators are all</p>	<p><b>Fractions (including decimals and percentages)</b></p> <p>Mentally add and subtract:</p> <ul style="list-style-type: none"> <li>○ tenths e.g. <math>0.8 + 0.9</math></li> <li>○ one-digit whole numbers and tenths e.g. <math>3.1 - 2.9</math></li> <li>○ complements of 1 e.g. <math>0.83 + 0.17 = 1</math></li> </ul> <p>F</p> <p>Add and subtract decimals with a different number of decimal places e.g. <math>102.3 + 97.82</math></p> <p>F</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place e.g. <math>27.59 = 27.6</math> (1d.p.)</p> <p>F</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents e.g. <math>650/1000 = 65/100 = 0.65</math>;</p> <p>F</p> <p>Read, write, order and compare numbers with up to three decimal</p>	<p>operations and methods to use and why e.g. Write a number story for this number sentence: <math>3709 = 4562 + 234 - 1087</math></p> <p>F</p> <p><b>Multiplication and Division</b></p> <p>Continue to practise and apply multiplication tables and related division facts, committing them to memory and using them confidently to make larger calculations</p> <p>F</p> <p>Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers</p> <p>R</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers e.g. prime factors of <math>60 = 2 \times 2 \times 3 \times 5</math></p> <p>F</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>)</p> <p>R</p>	<p>measures e.g. <math>755/1000 \text{ kg} = 0.755\text{kg}</math></p> <p>F</p> <p>Connect fractions <math>&gt;1</math> to division with remainders e.g. <math>37/5 = 37 \div 5 = 7 \text{ r } 2</math></p> <p>F</p> <p>Connect multiplication by a fraction to using fractions as operators e.g. <math>8/5</math> of 40 = <math>40 \times 8/5</math></p> <p>F</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. e.g. use egg boxes to represent <math>2 \frac{5}{6} \times 3 = 6 \frac{15}{6} = 8 \frac{3}{6} = 8 \frac{1}{2}</math></p> <p>F</p> <p>Recap reading and writing decimal numbers as fractions e.g. <math>0.8 = 4/5</math></p> <p>F</p> <p>Mentally add and subtract:</p> <ul style="list-style-type: none"> <li>○ tenths e.g. <math>0.8 + 0.9 - 0.2</math></li> <li>○ one-digit whole numbers and tenths e.g. <math>7.4 - 6.6</math></li> <li>○ complements of 1 e.g. <math>0.83 + 0.17 = 1</math></li> </ul> <p>F</p> <p>Add and subtract decimals with a different</p>
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## Lowbrook Academy

## Maths Overview

	<p><b>Fractions (including decimals and percentages)</b> Mentally add and subtract:</p> <ul style="list-style-type: none"> <li>o tenths e.g. <math>0.8 - 0.3</math></li> <li>o one-digit whole numbers and tenths e.g. <math>3.4 + 2.6</math></li> <li>o complements of 1 e.g. <math>0.85 + 0.15 = 1</math></li> </ul> <p>F</p> <p><b>MEASUREMENT</b> Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Draw lines accurately to the nearest millimetre and use conventional markings for parallel lines and right angles PS</p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles R</p> <p>Use the properties of</p>	<p>cubes and other cuboids, from 2-D representations e.g. using isometric paper PS</p> <p><b>Position and Direction</b> 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. PS</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Complete, read and interpret information in tables, including timetables and pictograms PS</p> <p><b>Competencies</b> 2D Shapes Time F</p>	<p>multiples of the same number F</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths making links to decimals and measures F</p> <p>Connect fractions <math>&gt;1</math> to division with remainders e.g. <math>\frac{5}{4} = 5 \div 4 = 1\frac{1}{4}</math> R</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other e.g. <math>5\frac{2}{3} = \frac{17}{3}</math> and write mathematical statements <math>&gt;1</math> as a mixed number e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math> R</p> <p>Add and subtract fractions with the same denominator and multiples of the same number e.g. <math>\frac{2}{3} + \frac{1}{6} = \frac{5}{6}</math> F</p> <p>Find fractions of numbers and quantities e.g. <math>\frac{3}{4}</math> of £14 F</p>	<p>places e.g. put these decimals in order starting from the smallest: 0.457, 0.42, 0.46, 0.426</p> <p>Solve problems and puzzles involving number up to three decimal places, checking the reasonableness of answers PS</p> <p><b>MEASUREMENT</b> Estimate volume e.g. using 1cm<sup>3</sup> blocks to build cubes and cuboids and capacity e.g. using water R</p> <p>Solve problems involving converting between units of time e.g. write these lengths of time in order, starting with the smallest: 250sec, 90min, <math>\frac{1}{2}</math> hour, 4min</p> <p>Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling</p>	<p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign PS</p> <p><b>Fractions (including decimals and percentages)</b> Know that percentages, decimals and fractions are different ways of expressing proportions F</p> <p>Count forwards and backwards in fractions and decimals bridging zero F</p> <p>Compare and order fractions whose denominators are all multiples of the same number F</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other e.g. <math>5\frac{2}{3} = \frac{17}{3}</math> and write mathematical statements <math>&gt;1</math> as a mixed number</p>	<p>number of decimal places e.g. <math>98.4 - 9.7</math> F</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place F</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents e.g. <math>782/1000 = 7/10 + 8/100 + 2/1000</math> F</p> <p>Read, write, order and compare numbers with up to three decimal places e.g. put these decimals in order starting from the smallest: 0.471, 0.46, 0.4, 0.465, 0.5 R</p> <p>Solve problems and puzzles involving number up to three decimal places, checking the reasonableness of answers PS</p> <p>Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a</p>
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	<p>rectangles to deduce related facts and find missing lengths and angles e.g. all angles are right angles, diagonals are congruent (same length) and bisect each other (divide into two equal parts), one diagonal separates the rectangle into two congruent triangles...</p> <p>R</p> <p><b>Competencies</b> Square Numbers Roman Numerals (F)</p>		<p>Connect multiplication by a fraction to using fractions as operators e.g. <math>\frac{2}{3}</math> of <math>12 = 12 \times \frac{2}{3}</math> F</p> <p>Read and write decimal numbers as fractions F</p> <p>Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator hundred, and as a decimal fraction F</p> <p>Recognise that percentages are proportions of quantities as well as operators on quantities F</p> <p>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 with a denominator of a multiple of 10 or 25.e.g. <math>\frac{12}{20} = \frac{60}{100} = 0.6 = 60\%</math> PS</p> <p><b>MEASUREMENT</b> convert between different units of</p>	<p><b>GEOMETRY</b> <b>Properties of Shapes</b> Identify 3-D shapes, including cubes and other cuboids, from 2-D representations PS</p> <p>Recap drawing lines accurately to the nearest millimetre and use conventional markings for parallel lines and right angles. R</p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles PS</p> <p>Draw given angles, and measure them in degrees (°) F</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>o angles at a point and one whole turn (total 360°)</li> <li>o angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total 180°)</li> <li>o other multiples of 90° F</li> </ul> <p>Use angle sum facts and other properties to make deductions about missing</p>	<p>F</p> <p>Add and subtract fractions with the same denominator and multiples of the same number e.g. <math>\frac{2}{5} + \frac{7}{10} = \frac{11}{10} = 1\frac{1}{10}</math> F</p> <p>Find fractions of numbers and quantities e.g. <math>\frac{7}{8}</math> of 240ml F</p> <p><b>MEASUREMENT</b> convert between different units of measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) e.g. <math>2.2\text{m} = 2200\text{mm}</math> R</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres R</p> <p>Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of</p>	<p>fraction with denominator hundred, and as a decimal fraction F</p> <p>Recognise that percentages are proportions of quantities e.g. 30% voted ‘yes’, 45% voted ‘no’ and the rest did not vote; what percentage did not vote? as well as operators on quantities e.g. find 45% of 160 F</p> <p>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 with a denominator of a multiple of 10 or 25. e.g. John ate <math>\frac{4}{5}</math> of a 20cm jelly snake; Jane ate 0.7 of her 20cm jelly snake; how much more has John eaten? PS</p> <p><b>GEOMETRY</b> <b>Properties of Shapes</b> Identify 3-D shapes, including cubes and other cuboids, from 2-D representations PS</p> <p>Revisit drawing lines</p>
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			<p>measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) e.g. 3.7 litres = 3700ml PS</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres e.g. given the perimeter and length of a rectangle, calculate its width, <math>w</math>, expressing it algebraically e.g. <math>20 = (2 \times 7) + 2w</math> PS</p> <p>Calculate and compare the area of squares and rectangles including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes PS</p> <p><b>GEOMETRY</b> <b>Position and Direction</b> Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that</p>	<p>angles R</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles e.g. all angles are right angles, diagonals are congruent (same length) and bisect each other (divide into two equal parts), one diagonal separates the rectangle into two congruent triangles... PS</p> <p>Use the term diagonal and make conjectures about the angles formed by diagonals and sides, and other properties of quadrilaterals, e.g. using dynamic geometry ICT tools. PS</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Complete, read and interpret information in tables, including timetables. PS</p> <p>Solve comparison, sum and difference problems using information presented in a line graph</p>	<p>irregular shapes e.g. investigate possible rectangles with the same area as a particular square R</p> <p>Estimate volume e.g. using <math>1\text{cm}^3</math> blocks to build cubes and cuboids and capacity e.g. using water R</p> <p>Solve problems involving converting between units of time e.g. three children share a trophy for 8 weeks and 4 days; they each have it for the same length of time; how long does each child keep the trophy? PS</p> <p>Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling PS</p> <p>Calculate the area of scale drawings using given measurements. e.g. calculate the area of a <math>5\text{cm} \times 3\text{cm}</math> garden on a scale drawing with a scale <math>1\text{cm}:2\text{m}</math> (<math>60\text{m}^2</math>) PS</p>	<p>accurately to the nearest millimetre and use conventional markings for parallel lines and right angles. F</p> <p>Revisit knowing angles are measured in degrees: estimate and compare acute, obtuse and reflex angles F</p> <p>Draw given angles, and measure them in degrees (<math>^\circ</math>) F</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>o angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>o angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> <li>o other multiples of <math>90^\circ</math></li> </ul> <p>F</p> <p>Use angle sum facts and other properties to make deductions about missing angles R</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles e.g. all angles are right angles, diagonals</p>
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			<p>the shape has not changed. R</p> <p><b>(Maths Week)</b> <b>Interpret data from scatter and line graphs and draw graphs relating two variables arising from their own enquiry (R).</b></p> <p><b>Financial Literacy</b> <b>Profit and Loss</b></p> <p><b>Competencies</b> 3D Shapes Angles (F)</p>	<p>e.g. on a distance-time graph, how long did it take to travel a particular distance? PS</p> <p>Connect work on coordinates and scales to their interpretation of time graphs PS</p> <p><b>Competencies</b> Conversion Equivalent Fractions (F)</p>	<p>Understand and use equivalences between metric and common imperial units such as inches, pounds and pints e.g. Given that an inch is approximately 2.5cm, calculate the metric equivalent of a foot (12 inches) F</p> <p><b>Consolidate:</b> <b>Times tables</b> to x12 and extend to x25 x50 and x15. (F)</p> <p><b>Competencies</b> Percentage Fraction Decimals (F)</p>	<p>are congruent (same length) and bisect each other (divide into two equal parts), one diagonal separates the rectangle into two congruent triangles... R</p> <p>Use the term diagonal and make conjectures about the angles formed by diagonals and sides, and other properties of quadrilaterals, e.g. using dynamic geometry ICT tools. R</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles e.g. sort triangles and quadrilaterals into regular and irregular sets, realising that only the equilateral triangles and the squares are regular PS</p> <p><b>Position and Direction</b> Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that</p>
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						<p>the shape has not changed. R</p> <p><b>STATISTICS</b> <b>Use and Interpret Data</b> Complete, read and interpret information in tables, including timetables. R Solve comparison, sum and difference problems using information presented in line graphs PS Connect work on coordinates and scales to their interpretation of time graphs R Begin to decide which representations of data are most appropriate and why M</p> <p><b>Sports Week: Creating pie charts using data from a school sports survey.</b> M</p> <p><b>Consolidate:</b> Times table to x12 and extend to x25 x50 and x15. (F)</p>
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Year 6	<p><b>NUMBER</b> <b>Number and Place Value</b> Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit e.g. What must be added to 26 523 to change it to 54 525? F</p> <p>Round any whole number to a required degree of accuracy e.g. round 265 496 to the nearest 10 000 (270 000) F</p> <p>Solve number and practical problems that involve number, place value and rounding e.g. What is the largest 5-digit number whose digits sum to 20? (99200). PS</p> <p><b>Addition, subtraction, multiplication and division</b> Continue to use all the multiplication tables to 12 × 12 in order to maintain their fluency e.g. 84 ÷ 12 F</p> <p>Continue to practise the four operations for larger</p>	<p><b>FRACTIONS</b> <b>Fractions (including decimals and percentages)</b> Use common factors to simplify fractions e.g. as the numerator and denominator have a common factor of 4, 12/16 can be simplified to 3/4; use common multiples to express fractions in the same denomination e.g. as the denominators have a common multiple of 12, 3/4 and 5/6 can both be expressed in twelfths i.e. 9/12 and 10/12 respectively F</p> <p>List equivalent fractions to identify fractions with common denominators F</p> <p>Compare and order fractions, including fractions &gt;1 e.g. put these fractions in order from the smallest: 5/4, 5/8, 3/2, 14/8 F</p> <p>Recall and use equivalences between simple fractions, decimals and</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Revisit read, write, order and compare numbers up to 10 000 000 and determine the value of each digit extend to real life word problems i.e. football crowd attendance. PS</p> <p>Round any whole number to a required degree of accuracy e.g. Give an example of a number which you might round to the nearest 10? Nearest 100 000? F</p> <p>Use negative numbers in context, and calculate intervals across zero e.g. how much warmer is 5°C than -4°C? (9°C) F</p> <p>Solve number and practical problems that involve number, place value and rounding e.g. What is the smallest number which rounds to 35 000, to the nearest 1000? (34 500). R</p>	<p><b>FRACTIONS</b> <b>Ration and Proportion</b> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. adjust a recipe for 4 people, to serve 6 people PS</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found e.g. two rectangular picture frames are the same shape, but one is bigger than the other; the smaller one measures 10cm by 15cm; the larger frame has a width of 30cm, what is its length? PS</p> <p>Begin to use the notation a : b to record ratio PS</p> <p>Solve problems involving the calculation of percentages (e.g. measures) such as 15% of 360 and the use of percentages for comparison PS</p>	<p><b>NUMBER</b> <b>Number and Place Value</b> Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit extend to reasoning. R</p> <p>Round any whole number to a required degree of accuracy e.g. What is the smallest number which rounds to 500 000, to the nearest 1000? (499 500). R</p> <p>Use negative numbers in context, and calculate intervals across zero extend to understand Time Zones. R</p> <p>Solve number and practical problems that involve number, place value and rounding e.g. What is the smallest 4-digit integer whose digits sum to 20? (10199). PS</p> <p><b>Addition, subtraction, multiplication and division</b> Continue to use all the multiplication tables to</p>	<p><b>ALGEBRA</b> Use symbols and letters to represent variables and unknowns in mathematical situations...</p> <ul style="list-style-type: none"> <li>missing numbers, lengths, coordinates and angles e.g. <math>68=6t-4</math> or the angles in a kite are <math>x^\circ</math>, <math>x^\circ</math>, <math>15^\circ</math> and <math>53^\circ</math>; find <math>x</math>, or plot points <math>(x, y)</math> where <math>x+y=1</math></li> <li>mathematics and science formulae e.g. <math>A=\frac{1}{2}(l \times h)</math></li> <li>arithmetic rules</li> <li>generalising number patterns e.g. 6, 11, 16, 21, ... <math>5n+1</math></li> <li>number puzzles e.g. <math>x+y=10</math> and <math>2x+y=13</math>; find <math>x</math> and <math>y</math> R</li> </ul> <p>Express missing number problems algebraically e.g. I'm thinking of a number; I double it and subtract 12 from the result; the answer is 60; what was my number? (<math>2x-12=60</math>, so <math>2x=72</math>, so <math>x=36</math>) R</p> <p>Use simple formulae expressed in words e.g.</p>
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<p>numbers using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division PS</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication F</p> <p>Perform mental calculations, including with mixed operations and large numbers e.g. <math>(13\ 500 \times 2) \div 9 = 3000</math> F</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why e.g. There are 6534 cars parked in a 3-storey car park; 1398 are on the first floor and 3765 are on the second floor; how many cars are parked on the third floor? PS</p> <p>Solve problems involving addition, subtraction, multiplication and division e.g. 396 children</p>	<p>percentages, including in different contexts e.g. order <math>\frac{4}{5}</math>, 75%, 0.9, <math>\frac{19}{20}</math> F</p> <p><b>ALGEBRA</b></p> <p>Use symbols and letters to represent variables and unknowns in mathematical situations...</p> <ul style="list-style-type: none"> <li>missing numbers, lengths, coordinates and angles e.g. <math>3x=24</math> or the angles in a triangle are <math>35^\circ</math>, <math>120^\circ</math> and <math>y^\circ</math>; find <math>y</math></li> <li>mathematics and science formulae e.g. <math>A=l \times w</math></li> <li>arithmetic rules e.g. <math>a+b=b+a</math> R</li> </ul> <p>Express missing number problems algebraically e.g. <math>17 = x + 4.5</math> R</p> <p>Use simple formulae expressed in words e.g. write a formula for the number of months, <math>m</math>, in <math>y</math> years. (<math>y=12m</math>) R</p> <p>Enumerate all possibilities of combinations of two</p>	<p><b>Addition, subtraction, multiplication and division</b></p> <p>Continue to use all the multiplication tables to <math>12 \times 12</math> in order to maintain their fluency. Extend to 20, 25 and 50 times table. F</p> <p>Continue to practise the four operations for larger numbers using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division F</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication extend to include decimals F</p> <p>Perform mental calculations, including with mixed operations and large numbers F</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods</p>	<p>Link percentages of <math>360^\circ</math> to calculating angles of pie charts PS</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples e.g. for every egg you need three spoons of flour; how many eggs are needed for 12 spoons of flour? PS</p> <p><b>ALGEBRA</b></p> <p>Use symbols and letters to represent variables and unknowns in mathematical situations...</p> <ul style="list-style-type: none"> <li>missing numbers, lengths, coordinates and angles e.g. <math>5y+1=16</math> or the angles in an isosceles triangle are <math>50^\circ</math>, <math>y^\circ</math> and <math>y^\circ</math>; find <math>y</math></li> <li>mathematics and science formulae e.g. <math>P=2(l+w)</math></li> <li>arithmetic rules e.g. <math>a \times b = b \times a</math></li> <li>generalising number patterns e.g. 3, 6, 9, 12, ... <math>3n</math></li> <li>number puzzles e.g. <math>a+b=8.5</math> and <math>a \times 6=15</math>; find <math>a</math> and <math>b</math></li> </ul>	<p><math>12 \times 12</math> in order to maintain their fluency extend to timed test including 20, 25 and 50. F</p> <p>Continue to practise the four operations for larger numbers using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division and include in problem solving and reasoning questions explaining methods. R</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication R</p> <p>Perform mental calculations, including with mixed operations and large numbers e.g. <math>(13\ 400 + 10\ 600) \times 4 \div 12 = 8000</math> F</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods</p>	<p>write a formula for the cost of a taxi journey, <math>C</math>, which is <math>\text{£}2.10</math> plus <math>\text{£}1.60</math> per kilometre, <math>k</math>. <math>(C=2.10+1.60k)</math> R</p> <p>Enumerate all possibilities of combinations of two variables e.g. list all the combinations of boys and girls in a class where there are twice as many boys as girls and between 25 &amp; 35 children in the class altogether. PS</p> <p>Generate and describe linear number sequences e.g. 6, 13, 20, 27, ... <math>7n-1</math> R</p> <p>Find pairs of numbers that satisfy number sentences involving two unknowns. e.g. <math>a - b = 5</math>, give pairs of values that <math>a</math> and <math>b</math> could have (e.g. 8, 3 or 6.5, 1.5 or ...) R</p> <p><b>MEASUREMENT</b></p> <p>Revisit use, read, write and convert between standard units, converting measurements of length, mass, volume and time</p>
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<p>and 37 adults went on a school trip; buses seat 57 people; how many buses were needed? PS Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. e.g. find the perimeter of a football pitch with side lengths 105.3m and 46.8m (estimate: <math>(105+45)\times 2=300\text{m}</math>; actual: <math>(105.3+46.8)\times 2=304.2\text{m}</math> (same number of decimal places as numbers in the question) R Identify common factors, common multiples and prime numbers e.g. common factors of 12 and 15 are 1 and 3; common multiples of 4 and 6 are 12, 24, 36...; prime numbers are numbers with exactly 2 factors e.g. 2, 3, 5, 7, 11, 13, ... F</p>	<p>variables e.g. investigate how many different ways 2 red eggs can be placed in a 6-space egg carton, by starting with a 3-space carton, 4-space carton etc? R <b>MEASUREMENT</b> Use, read, write and convert between standard units, converting measurements of length, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to three decimal places e.g. <math>4.52\text{kg} = 4520\text{g}</math>; <math>1.005\text{km} = 1005\text{m}</math> F Recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate rectangles with areas of <math>24\text{cm}^2</math> to find which has the smallest perimeter M Recognise when it is possible to use formulae for area of shapes e.g. find the length of</p>	<p>to use and why e.g. Three people won £365 496 on the lottery; one received £197 540, another received £40 010; how much did the third person receive? R Solve problems involving addition, subtraction, multiplication and division e.g. I think of a number and subtract 5.6 from it then multiply the result by 6; the answer is 7.2; what was my number? PS Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy e.g. A box contains approximately 52 matches; how many boxes can be filled with 10 000 matches? R Identify common factors, common multiples and prime numbers e.g. Find the smallest common multiple of 5, 6 and 8 (120) F Divide numbers up to 4</p>	<p>R Express missing number problems algebraically e.g. the perimeter of a triangle is 20cm; it has two sides of length 8cm; what is the length of the other side? (<math>20=2\times 8+x</math> so <math>x=4\text{cm}</math>) R Use simple formulae expressed in words e.g. write a formula for the cost of a party, C, which costs £100 plus £2 per person, n. (<math>C=100+2n</math>) R Enumerate all possibilities of combinations of two variables e.g. investigate all possible half-time scores when the full time score of a football match is 4:2 R Generate and describe linear number sequences e.g. write the first 5 terms in a 'decrease by 9' sequence starting from 20, or find the nth term of a simple sequence e.g. 4, 8, 12, 16, ... <math>4n</math> R Find pairs of numbers that satisfy number</p>	<p>to use and why e.g. Write a number story for this number sentence: <math>23.5 = 20.4 + 4.9 - 1.8</math> F Solve problems involving addition, subtraction, multiplication and division e.g. Club A sold 3500 tickets for £9.50 each and Club B sold 8150 tickets for £3.50; how much more money did Club A make than Club B? PS Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy R Identify common factors, common multiples and prime numbers e.g. Find the highest common factor of 120, 90 and 75 (15) or Find all the prime numbers between 80 and 100. F Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as</p>	<p>from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to three decimal places F Recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate parallelograms with areas of <math>24\text{cm}^2</math> to find which has the smallest perimeter M Recognise when it is possible to use formulae for area and volume of shapes e.g. find the height of cuboid which is 12cm long, 2cm high and has the same volume as a cube with sides of 6cm R Calculate the area of parallelograms and triangles, relating it to the area of rectangles R Solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate e.g. A jug holds 550ml;</p>
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	<p><b>FRACTIONS</b> <b>Fractions (including decimals and percentages)</b> Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places e.g. <math>205.6 \div 100 = 2.056</math> F Multiply one-digit numbers with up to two decimal places by whole numbers e.g. <math>0.6 \times 7</math> F</p> <p><b>Ratio and Proportion</b> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. adjust a recipe for 4 people, to serve 20 people PS</p> <p><b>GEOMETRY</b> <b>Properties of Shape</b> Recognise, describe and build simple 3-D shapes, including making nets e.g. investigate different nets</p>	<p>rectangle which is 4m wide and has the same area as a square with a side length of 8cm. R Calculate the area of triangles, relating it to the area of rectangles, e.g. compare the 'counting squares' method to using the formula for the area of a triangle PS</p> <p><b>GEOMETRY</b> <b>Properties of shapes</b> Draw 2-D shapes using given dimensions and angles using measuring tools and conventional markings and labels for lines and angles e.g. same length lines, parallel lines and same size angles: PS</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> Interpret and construct pie charts and line graphs and use these to solve problems e.g. draw a pie chart to show how Jack spends his £36 birthday money:</p>	<p>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 F Use their knowledge of the order of operations to carry out calculations involving the four operations and using brackets; e.g. <math>2 + 1 \times 3 = 5</math> and <math>(2 + 1) \times 3 = 9</math>. R</p> <p><b>FRACTIONS</b> <b>Fractions (including decimals and percentages)</b> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination F List equivalent fractions to identify fractions with common denominators F Compare and order fractions, including fractions <math>&gt;1</math> e.g. put</p>	<p>sentences involving two unknowns. e.g. <math>a - b = 5</math>, give pairs of values that a and b could have (e.g. 8, 3 or 6.5, 1.5 or ...) or. <math>p \times q = 24</math>; if p and q are both positive, even numbers, list all the possible combinations (e.g. <math>2 \times 12</math>, <math>4 \times 6</math>, ...) F</p> <p><b>MEASUREMENT</b> Use, read, write and convert between standard units, converting measurements of mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to three decimal places F Recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate triangles with areas of <math>12\text{cm}^2</math> to find which has the smallest perimeter R Recognise when it is possible to use formulae for area and volume of</p>	<p>whole number remainders, fractions, or by rounding, as appropriate for the context F Use their knowledge of the order of operations to carry out calculations involving the four operations and using brackets e.g. <math>14 \times (29 - 12) + 7 = 245</math></p> <p><b>FRACTIONS</b> <b>Fractions (including decimals and percentages)</b> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination F List equivalent fractions to identify fractions with common denominators F Compare and order fractions, including fractions <math>&gt;1</math> e.g. put these fractions in order from the smallest: <math>5/4</math>, <math>5/6</math>, <math>3/5</math>, <math>4/3</math> F Associate a fraction with division and calculate</p>	<p>how many jugs of water are needed to fill a 4.8 litre bucket? PS convert between miles and kilometres and other units commonly used e.g. use a conversion line graph or be able to work out that 6 pints of milk is a bit more than 3 litres PS calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>) and extending to other units, such as <math>\text{mm}^3</math> and <math>\text{km}^3</math>. M Begin to use compound units for speed e.g. miles per hour M</p> <p><b>GEOMETRY</b> <b>Properties of shapes</b> Draw 2-D shapes using given dimensions and angles using measuring tools and conventional markings and labels for lines and angles e.g. construct a triangle or complete a parallelogram</p>
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	<p>for a cube, recognising when 'nets' will fold to make a cube and when they will not. R</p> <p><b>Position and Direction</b> Describe positions on the full coordinate grid (all four quadrants) e.g. (-3, 7) R</p> <p>Draw and translate simple shapes on the coordinate plane and reflect them in the axes. PS</p> <p>Predict missing coordinates of quadrilaterals by using the properties of shapes, which may be expressed algebraically e.g. translating vertex (a, b) to (a-2, b+3), or find the other vertices of a square, given two of them are (a, b) and (a+d, b+d) R</p> <p><b>Competencies:</b> -Fractions, Decimals and Percentages -Equivalent Fractions -Conversions (F).</p>	<ul style="list-style-type: none"> <li>• £9 snacks</li> <li>• £15 toys</li> <li>• £12 books</li> </ul> <p>PS</p> <p>Encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects e.g. a scattergraph connecting heights of children and their long-jump distance M</p> <p><b>Competencies:</b> -Angles -Properties of 2D Shape -Properties of 3D Shape -Roman Numerals (F)</p>	<p>these fractions in order from the smallest: <math>\frac{5}{4}</math>, <math>\frac{5}{6}</math>, <math>\frac{3}{2}</math>, <math>\frac{4}{3}</math> PS</p> <p>Associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. <math>\frac{5}{8}</math> F</p> <p>Use understanding of relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity e.g. if <math>\frac{1}{4}</math> of a length is 36cm, then the whole length is <math>36 \times 4 = 144\text{cm}</math> R</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions e.g. <math>\frac{1}{2} + \frac{1}{8} = \frac{5}{8}</math> F</p> <p>Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places e.g. <math>\times</math></p>	<p>shapes e.g. find the length of the side of a cube with a volume of <math>27\text{cm}^3</math> R</p> <p>Calculate the area of parallelograms and triangles, relating it to the area of rectangles, e.g. compare the 'counting squares' method to using the formula for the area of a parallelogram R</p> <p>Solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate e.g. Ben walked 850m to the bus stop, travelled on a bus for 8.67km and then a train for 120.9km; how far did he travel altogether? PS</p> <p>Convert between miles and kilometres and other units commonly used e.g. know that a mile is approximately 1.6km (and 1km is approximately 0.6miles) and use this to make rough calculations</p>	<p>decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. <math>\frac{5}{8}</math> F</p> <p>Use understanding of relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity e.g. if <math>\frac{1}{5}</math> of a mass is 150g, then the whole mass is <math>150 \times 5 = 750\text{g}</math> R</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions e.g. <math>\frac{13}{4} - \frac{5}{6} = \frac{11}{12}</math> F</p> <p>Use a variety of images to support understanding of multiplication with fractions R</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math> F</p> <p>Divide proper fractions by whole numbers e.g. <math>\frac{1}{3} \div 2 = \frac{1}{6}</math></p>	<p>with given lengths and angles PS</p> <p>Recognise, describe and build simple 3-D shapes, including making nets R</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons PS</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles describing them algebraically e.g. <math>a=180-(b+c)</math> R</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius describing it algebraically as <math>d=2r</math> M</p> <p><b>Position and Direction</b> Describe positions on the full coordinate grid (all four quadrants)</p>
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			<p>100 = 140.8 R</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers e.g. <math>0.06 \times 8</math> F</p> <p>Use written division methods in cases where the answer has up to two decimal places e.g. <math>458 \div 8 = 57.25</math> R</p> <p>Multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers e.g. <math>3.15 \times 62</math> F</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy and check the reasonableness of answers. R</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. e.g. find a fraction which lies between 0.4 and 0.5 F</p>	<p>R</p> <p>Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>) and extending to other units, such as mm<sup>3</sup> and km<sup>3</sup>. PS</p> <p><b>GEOMETRY</b> <b>Properties of shapes</b> Draw 2-D shapes using given dimensions and angles using measuring tools and conventional markings and labels for lines and angles e.g. complete a triangle with given lengths and angles R</p> <p>Recognise, describe and build simple 3-D shapes, including making nets e.g. visualise 3-D shapes drawn on isometric paper and begin to draw 2-D representations of 3-D shapes R</p> <p>Compare and classify geometric shapes based on their properties and sizes (e.g. parallel sides, line symmetry, types of</p>	<p>Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places e.g. <math>\div 1000 = 0.45</math> F</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers e.g. <math>0.04 \times 12</math> F</p> <p>Use written division methods in cases where the answer has up to two decimal places e.g. <math>693 \div 15 = 14.2</math> F</p> <p>Multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers e.g. <math>93.15 \div 5</math> F</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy and check the reasonableness of answers. PS</p> <p>Recall and use equivalences between simple fractions,</p>	<p>R</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. PS</p> <p>Predict missing coordinates of quadrilaterals by using the properties of shapes, which may be expressed algebraically e.g. translating vertex (a, b) to (a-2, b+3), or find the other vertices of a square, given two of them are (a, b) and (a+d, b+d) R</p> <p>Draw and label a pair of axes in all four quadrants with equal scaling. F</p> <p><b>STATISTICS</b> <b>Use and interpret data</b> Calculate and interpret the mean as an average. F</p> <p>Interpret and construct pie charts and line graphs and use these to solve problems e.g. connect conversion from kilometres to miles in measure to its graphical representation.</p>
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			<p><b>STATISTICS</b></p> <p><b>Use and interpret data</b> Calculate and interpret the mean as an average. e.g. find the mean height of these children: 1.2m, 1.07m and 1.12m F</p> <p><b>Competencies:</b> -Square Roots -Time Facts</p>	<p>angles etc) and find unknown angles in any triangles, quadrilaterals, and regular polygons PS</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles describing them algebraically e.g. <math>a=180-(b+c)</math>. R</p> <p><b>Position and Direction</b> Describe positions on the full coordinate grid (all four quadrants) R</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. PS</p> <p>Predict missing coordinates of quadrilaterals by using the properties of shapes, which may be expressed algebraically e.g. translating vertex (a, b) to (a-2, b+3), or find the other vertices of a square, given two of them are (a, b) and (a+d, b+d) R</p>	<p>decimals and percentages, including in different contexts e.g. find a decimal which lies between <math>\frac{3}{8}</math> and <math>\frac{1}{2}</math></p> <p><b>Ratio and Proportion</b> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. adjust a recipe for 6 people, to serve 15 people R</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found e.g. On a map 2cm represents 1km; a road measures 7cm on the map, how long is it in real life? M</p> <p>Use the notation a : b to record ratio F</p> <p>Solve problems involving the calculation of percentages (e.g. measures) such as 15% of 360 and the use of percentages for comparison PS</p>	<p>M</p> <p>Encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects. M</p> <p><b>Sports Week: Creating scatter diagrams and interpreting data from athletic performances.</b></p>
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				<p><b>STATISTICS</b></p> <p><b>Use and interpret data</b></p> <p><b>Using Excel</b></p> <p>Interpret and construct pie charts and line graphs and use these to solve problems e.g. create a conversion graph for pounds and Euros</p> <p>R</p> <p>Encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.</p> <p>M</p> <p><b>Competencies:</b></p> <p>Retest, revise and consolidate</p>	<p>Link percentages of 360° to calculating angles of pie charts</p> <p>PS</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples e.g. the ratio of boys to girls in class 6 is 1:2; there are 8 boys, how many girls are there?</p> <p>R</p> <p><b>Competencies:</b></p> <p>Retest, revise and consolidate</p>	
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**Key:**

Reasoning (R)

Mastery (M)

Problem solving (PS)

Fluency (F)