



## The Mill Academy

### Maths Fluency: Automatic Recall Progression

*It is essential for our children to be able to recall certain maths facts automatically-without the need for working out, visual or concrete prompts. These are the expectations for each year group.*

Area of maths	Nursery	Reception	Year 1	Year 2
Number	Subitise to 3 Show fingers up to 5 Recognise numbers up to 5	Subitise to 5 Show fingers up to 10 Recognise numbers up to 10	Subitise to 20 using tens frames Read and count numbers up to 100 (forwards and backwards) Write numbers to 20 (no reversals) Say 1 more and 1 less of numbers up to 100 Count forwards and backwards in 10's Count forwards in 5's to 100	Recognise the value of each digit in a 2-digit number Compare numbers to 100 saying which is greater/less Order 5 number up to 100 Count forwards in 3's up to 36

			Count forwards in 2's to 50	
Addition and Subtraction		Say number bonds to 2,3,4,5 and subtraction facts	Number bonds to 6,7,8,9,10 and subtraction facts Recognise + - = symbols	Number bonds 11,12,13,14,15,16,17, 18,19,20 and subtraction facts Number bonds to 100 in multiples of 10 Use related facts and previous number bond knowledge to add and subtract 1-digit numbers to a 2 digit number not crossing tens e.g. $24+3=27$ $27-4=23$ Use commutative and inverse knowledge to write fact families for a given calculation e.g. $24+7=31$ so I know $7+24=31$ , $31-7=24$ and $31-24=7$
Multiplication and Division		Say doubles up to double 5 Say odd and even numbers up to 10	Say doubles up to double 10 Say odd and even numbers up to 20	Say doubles, 20, 30, 40, 50 Recognise odd and even numbers up to 100 Multiplication and division facts: 2,5,10

Fractions (inc decimals and percentages)			Say halves up to half of 10 Recognise a half of a circle, square and triangle	Say halves up to a half of 20 Recognise $\frac{1}{4}$ and $\frac{3}{4}$ of a circle, square and rectangle
Measurement	Use the opposites: long/tall, short, big, small, heavy, light, full, empty Know 'morning' and 'night'	Compare measurements using: longer, shorter, bigger, smaller, heavier, lighter, taller, nearly full, nearly empty Know 'afternoon'	Compare measurement of more than two objects using: longer than, shorter than, bigger than, smaller than, heavier than, lighter than, taller than Know 'half full' Know 'yesterday, today, tomorrow, evening' Know days of the week	Recognise coins and notes Know the number of minutes in an hour and the number of hours in a day Know the months of the year order and know 1 month before and after Know o'clock and half past times
Geometry	Use 'Straight', 'Round', 'Flat' when describing shape Use 'up', 'down' correctly Use words to describe a pattern e.g. stripy, spotty	Know circle, rectangle, square, and triangle Use forwards and backwards Say an AB pattern	Know the number of sides for: circle, square, rectangle, triangle Know cube, cuboid, sphere, pyramid Use left and right	Know the words sides, vertices, faces and edges Know clockwise and anticlockwise
Statistics				

Area of maths	Year 3	Year 4	Year 5	Year 6
Number	<p>Count forwards in: 4, 8, 50, 100</p> <p>Say 10 more or less-numbers up to 1000 (not crossing 100)</p> <p>Recognise the value of each digit in a 3-digit number</p> <p>Read numbers up to 1000</p>	<p>count in multiples of 6, 7, 9, 25 and 1000</p> <p>Count backwards through zero to include negative numbers</p> <p>recognise the place value of each digit in a four-digit number</p> <p>Read Roman numerals to 20</p>	<p>Read numbers to at least 1 000 000 and determine the value of each digit</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero.</p> <p>Read Roman numerals to 50</p>	<p>Read numbers up to 10 000 000 and determine the value of each digit</p>
Addition and Subtraction	<p>Number bonds to 100 in multiples of 5</p> <p>Add and subtract 1-digit numbers to a 2-digit number including crossing tens e.g. <math>24+7=31</math> I know this because <math>4+7</math> is 11, <math>31-4=27</math></p>	<p>Add and subtract 2-digit numbers to a 2-digit number not crossing tens</p>	<p>Add and subtract 2-digit numbers to a 2-digit number crossing tens</p> <p>Add and subtract 3-digit numbers tens number not crossing to a new hundred hundreds e.g. <math>234+123=357</math></p>	<p>Add and subtract with increasing larger numbers</p>

<p><b>Multiplication and Division</b></p>	<p>Recognise multiples of 2, 5, 10 of any number            Say doubles, 15, 25, 35, 45, 60, 70, 80, 90, 100            Multiplication and division facts: 3, 4, 8</p>	<p>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math>            Use place value, known and derived facts to multiply and divide mentally, including:            multiplying by 0 and 1 and dividing by 1</p>	<p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.            multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Perform mental calculations, including with mixed operations and large numbers (E.g <math>5 \times 200 = 1,000</math>)            Multiply one digit numbers by decimals less than one E.g <math>0.3 \times 5 = 1.5</math></p>
<p><b>Fractions (inc decimals and percentages)</b></p>	<p>Say halves up to half of 30 plus know half of 50 and 100            Know <math>\frac{1}{2}</math> and <math>\frac{2}{4}</math> are equivalent            Recognise <math>\frac{1}{3}</math> or <math>\frac{2}{3}</math> of a rectangle or circle</p>	<p>Count up and down in hundredths.</p>	<p>Read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]            Read numbers with up to three decimal places            Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'            Know 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></p>	<p>recall and use equivalences between simple fractions, decimals and percentages E.g <math>\frac{3}{4} = 75\% = 0.75</math></p>
<p><b>Measurement</b></p>	<p>Know the number of seconds in a minute and number of days</p>	<p>Read the time on both analogue and</p>	<p>Know how many cm in a m, m in a km, mm in a cm, g in kg and ml in l.</p>	<p>Convert mentally between simple units of measure</p>

	<p>in each month, year and leap year</p> <p>Know quarter past and to times</p> <p>Know 100p=£1</p> <p>Know amount of mm in lcm</p>	<p>digital 12 and 24 hour clocks</p>		<p>E.G 3m = 300cm 1.5 L - 1,500ml</p>
<p>Geometry</p>	<p>Know the number of faces on a cube, cuboid, cone, square-based pyramid</p> <p>Know the words horizontal and vertical</p> <p>Identify a right angle</p>	<p>Identify acute and obtuse angles</p>	<p>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>Know angles are measured in degrees</p> <p>identify:</p> <ul style="list-style-type: none"> <li>□ angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>□ angles at a point on a straight line total <math>180^\circ</math></li> <li>□ other multiples of <math>90^\circ</math></li> </ul>	<p>Know the angles in a triangle total 180 degrees and the angles in a quadrilateral total 360.</p>
<p>Statistics</p>	<p>Identify a pictogram, bar chart and table</p>	<p>Identify a line graph</p>		<p>Identify a pie chart</p>