



**Progression of skills: Maths - Maths measurement**

**Curriculum intent:**

At Shawclough, our intent for Mathematics is to teach a rich, balanced and progressive curriculum using Maths to reason, problem solve and develop fluent conceptual understanding in each area. Our curriculum allows children to better make sense of the world around them by making connections between Mathematics and everyday life. Our policies, resources and schemes of work support our vision and clearly outline where Maths can be incorporated across different curriculum areas. The structure of the Mathematics curriculum across school shows clear progression in line with age related expectations. Teaching curriculum content in blocks allows children to explore skills and knowledge in depth and gain a secure understanding of particular subject matter. Key knowledge and skills are also revisited regularly allowing repetition to embed learning. A concrete, pictorial, abstract approach provides children with a clear structure in which they can develop their depth of understanding of mathematical concepts. We aim to ensure that Mathematics is a high profile subject which children view positively and with a 'Can do' attitude.

For the youngest children developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationship between and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding- such as using manipulative, including small pebbles and tens frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

<b>Intended Experiences Nursery</b>	<b>Intended Experiences Reception</b>	<b>Early Learning Goal Maths – Numerical pattern</b>
To spot patterns and talk about them e.g. stripes on a scarf. To react to changes in amounts e.g in	To understand the 'one more than/one less than' relationship between consecutive numbers ·	Verbally count beyond 20, recognising the pattern of the counting system. · Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as

<p>hiding and returning rhymes (two little dicky birds)</p> <p>To notice and arrange things in patterns</p> <p>To begin to understand position through words alone e.g. in front behind</p> <p>To begin to use vocabulary to describe the time of day e.g. morning, afternoon, evening, yesterday, tomorrow</p> <p>To select shapes appropriately when building</p> <p>To extend a pattern that has been made and create my own simple patterns (ABAB)</p> <p>To start to talk about upcoming events e.g. Birthdays and then talk about what happened after the event</p> <p>To understand in front behind, on top, next to</p> <p>To talk about patterns and spot errors</p> <p>To continue and create patterns</p> <p>To sequence a pattern of events using time language e.g. first, next, then.</p> <p>To talk about 2D and 3D shapes (using informal vocab e.g. sides, straight, round, flat)</p> <p>To describe a familiar route using vocab e.g. in front, behind</p>	<p>To link the number symbol (numeral) with its cardinal number value.</p> <p>To count to 10 by rote To compare manipulatives (e.g. saying when one tower is bigger/smaller)</p> <p>To find one more/ one less using resources</p> <p>To continue and copy patterns</p> <p>To create their own patterns</p> <p>To subitise, recall number bonds, estimate and compare quantities and have a deep understanding of number to 10.</p> <p>To to 20, knowing the teen numbers ·</p> <p>To compare two quantities saying when one is bigger/smaller/ same</p> <p>To say a number that is one more/ less without resources. To spot errors in the pattern and can name a pattern e.g. ABAb</p> <p>To star to identify odd and even numbers linked to sharing</p>	<p>the other quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally</p>
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**COMPARING AND ESTIMATING**

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Compare, describe and solve practical problems for:</p> <p>Lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]</p> <p>Mass/weight [e.g. heavy/light, heavier than, lighter than]</p> <p>Capacity and volume [e.g. full/empty, more than less than, half, half full, quarter]</p> <p>Time [e.g. quicker, slower, earlier, later]</p>	<p>Compare and order lengths, mass, volume/capacity and record the results using &lt;, &gt; and =</p>		<p>Estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)</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 irregular shapes (also included in measuring).</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></p>
				<p>Estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build cubes and cuboids) and capacity (e.g. using water).</p>	
<p>Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].</p>	<p>Compare and sequence intervals of time.</p>	<p>Compare durations of events for example to calculate the time taken by particular events or tasks.</p>			
		<p>Estimate and read time with increasing accuracy to the nearest minute;</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 (appears also in Telling the Time)			
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**MEASURING AND CALCULATING**

Measure and begin to record the following: <ul style="list-style-type: none"> <li>- <b>Lengths and heights</b></li> <li>- <b>Mass/weight</b></li> <li>- <b>Capacity and volume</b></li> <li>- <b>Time</b> (hours, minutes, seconds).</li> </ul>	Choose and use appropriate standard units to estimate and measure <b>length/height</b> in any direction (m/cm); <b>mass</b> (kg/g); <b>temperature</b> (°C); <b>capacity</b> (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.	Measure, compare, add and subtract; <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml)	Estimate, compare and calculate <b>different measures</b> , including <b>money in pounds and pence</b> (appears also in Comparing)	Use all four operations to solve problems involving measure (e.g. <b>length, mass, volume, money</b> ) using decimal notation including scaling.	Solve problems involving the calculation and conversion of <b>units of measure</b> , using decimal notation up to three decimal places where appropriate (appears also in Converting).
		Measure the <b>perimeter</b> of simple 2-D shapes.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Measure and calculate the <b>perimeter</b> of composite rectilinear shapes in centimetres and metres.	Recognise that shapes with the same areas can have different <b>perimeters</b> and vice versa.
Recognise and know the value of different denominations of <b>coins and notes</b> .	Recognise and use symbols for pounds ( <b>£</b> ) and pence ( <b>p</b> ); combine amounts to make a particular value.	Add and subtract amounts of <b>money</b> to give change, using both £ and p in practical contexts.			

	Find different combinations of coins that equal the same amounts of money.				
	<b>Solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change.				
			Find the area of rectilinear shapes by counting squares.	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 irregular shapes.  Recognise and use square numbers and cube numbers, and the notation for squared ( <sup>2</sup> ) and cubed ( <sup>3</sup> ) (copied from Multiplication and Division)	Calculate the area of parallelograms and triangles.  Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm <sup>3</sup> ) and cubic metres (m <sup>3</sup> ), and extending to other units [e.g. mm <sup>3</sup> and km <sup>3</sup> ]
<b>TELLING THE TIME</b>					
Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a	Tell and write the time from an analogue clock, including using Roman numerals from I to XII,	Read, write and convert time between analogue and digital 12 and 24 hour clocks		

	clock face to show these times.	and 12-hour and 24-hour clocks.	(appears also in Converting)		
Recognise and use language relating to dates, including days of the week, weeks, months and years.	Know the number of minutes in an hour and the number of hours in a day (appears also in Converting).	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 (appears in Comparing and Estimating).			
			Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)	Solve problems involving converting between units of time.	
<b>CONVERTING</b>					
	Know the number of minutes in an hour and the number of hours in a day (appears also in Telling the Time)	Know the number of seconds in a minute and the number of days in each month, year and leap year.	Convert between different units of measure (e.g. kilometre to metre; hour to minute)	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

			Read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	Solve problems involving converting between units of time	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)
			Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	Understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.	Convert between miles and kilometres.

### VOCABULARY

Measure	Measure	Measure	Measure	Measure	Measure
Measure, <b>measurement</b> , size, compare, guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, <b>roughly</b> , just over, just under.	Measure, measurement, size, compare, <b>measuring scale</b> , guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, roughly, just over, just under.	Measure, measurement, size, compare, measuring scale, <b>division</b> , guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, <b>approximately</b> , roughly, just over, just under.	Measure, measurement, size, compare, <b>unit</b> , <b>standard unit</b> , <b>metric unit</b> , guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, roughly, just over, just under.	Measure, measurement, size, compare, unit, standard unit, metric unit, <b>imperial unit</b> , guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, roughly, just over, just under.	Measure, measurement, size, compare, unit, standard unit, metric unit, imperial unit, guess, estimate, enough, not enough, too much, too little, too many, too few, nearly, close to, about the same as, roughly, just over, just under.
Length	Length	Length	Length	Length	Length
<b>Centimetre</b> , metre, length, height, width, depth, long, short, tall, high, low, wide, narrow, thick, thin, longer,	Centimetre, metre, length, height, width, depth, long, short, tall, high, low, wide, narrow, thick, thin, longer,	<b>Millimetre</b> , centimetre, metre, <b>kilometre</b> , <b>mile</b> , length, height, width, depth, long, short, tall, high, low, wide, narrow,	Millimetre, centimetre, metre, kilometre, mile, length, height, width, depth, <b>breadth</b> , long, short, tall, high, low,	Millimetre, centimetre, metre, kilometre, mile, length, height, width, depth, breadth, long, short, tall, high, low,	Millimetre, centimetre, metre, kilometre, mile, <b>yard</b> , <b>foot</b> , <b>feet</b> , <b>inch</b> , <b>inches</b> , length, height, width, depth, breadth,

shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, near, close, ruler, metre stick	shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, ruler, metre stick, Tape measure	thick, thin, longer, shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, distance apart ... between ... to ... from, perimeter, ruler, metre stick, Tape measure	wide, narrow, thick, thin, longer, shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, distance apart ... between ... to ... from, edge, perimeter, area, covers, square centimetre (cm <sup>2</sup> ), ruler, metre stick, Tape measure	wide, narrow, thick, thin, longer, shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, distance apart ... between ... to ... from, edge, perimeter, area, covers, square centimetre (cm <sup>2</sup> ), square metre (m <sup>2</sup> ), square millimetre (mm <sup>2</sup> ), ruler, metre stick, Tape measure	long, short, tall, high, low, wide, narrow, thick, thin, longer, shorter, taller, higher .... And so on, longest, shortest, tallest, highest ... and so on, far, further, furthest, near, close, distance apart ... between ... to ... from, edge, perimeter, circumference, area, covers, square centimetre (cm <sup>2</sup> ), square metre (m <sup>2</sup> ), square millimetre (mm <sup>2</sup> ), ruler, metre stick, Tape measure
<b>Weight</b>	<b>Weight</b>	<b>Weight</b>	<b>Weight</b>	<b>Weight</b>	<b>Weight</b>
Kilogram, half kilogram, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales	Kilogram, half kilogram, gram, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales	Kilogram, half kilogram, gram, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales	Mass: big, bigger, small, smaller, Weight: heavy/light, heavier/lighter, heaviest/lightest, Kilogram, half kilogram, gram, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales	Mass: big, bigger, small, smaller, Weight: heavy/light, heavier/lighter, heaviest/lightest, Kilogram, half kilogram, gram, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales	Mass: big, bigger, small, smaller, Weight: heavy/light, heavier/lighter, heaviest/lightest, tonne, Kilogram, half kilogram, gram, pound, ounce, weigh, weighs, balances, heavy, light, heavier than, lighter than, heaviest, lightest, scales
<b>Capacity and volume</b>	<b>Capacity and volume</b>	<b>Capacity and volume</b>	<b>Capacity and volume</b>	<b>Capacity and volume</b>	<b>Capacity and volume</b>
Litre, half litre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, container	Litre, half litre, millilitre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, contains, container	Litre, half litre, millilitre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, contains, container	Litre, half litre, millilitre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, contains, container, measuring cylinder	Litre, half litre, millilitre, capacity, volume, full, empty, more than, less than, half full, quarter full, holds, contains, container, measuring cylinder, pint, gallon	Litre, half litre, millilitre, centilitre, cubic centimetres (cm <sup>3</sup> ), cubic metres (m <sup>3</sup> ), cubic millimetres (mm <sup>3</sup> ), cubic kilometres (km <sup>3</sup> ), capacity, volume, full,



					empty, more than, less than, half full, quarter full, holds, contains, container, measuring cylinder, pint, gallon
<b>Temperature</b>	<b>Temperature</b>	<b>Temperature</b>	<b>Temperature</b>	<b>Temperature</b>	<b>Temperature</b>
	Temperature, degree	Temperature, degree, centigrade	Temperature, degree, centigrade	Temperature, degree, centigrade	Temperature, degree, centigrade
<b>Time</b>	<b>Time</b>	<b>Time</b>	<b>Time</b>	<b>Time</b>	<b>Time</b>
Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, month, year, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, earlier, later, next, first, last, midnight, date, now, soon, early, late, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? How long will it be to ...? How long will it take to...?	Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, fortnight, month, year, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, earlier, later, next, first, last, midnight, date, now, soon, early, late, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? How long will it be to ...? How long will it take to...?	Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, fortnight, month, year, century, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, earlier, later, next, first, last, midnight, calendar, late, earliest, latest, quick, quicker, quickest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, how long ago? How long	Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, fortnight, month, year, leap year, century, millennium, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, earlier, later, next, first, last, noon, midnight, calendar, date, date of birth, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes	Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, fortnight, month, year, leap year, century, millennium, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, earlier, later, next, first, last, noon, midnight, calendar, date, date of birth, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes	Time, days of the week, Monday, Tuesday ... Months of the year (January, February ...), seasons: spring, summer, autumn, winter, Day, week, weekend, fortnight, month, year, leap year, century, millennium, birthday, holiday, morning, afternoon, evening, night, bedtime, dinner time, playtime, today, yesterday, tomorrow, before, after, earlier, later, next, first, last, noon, midnight, calendar, date, date of birth, now, soon, early, late, earliest, latest, quick, quicker, quickest, quickly, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes

<p>How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, clock, clock face, watch, hands, hour hand, minute hand, hours, minutes</p>	<p>How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, clock, clock face, watch, hands, digital/analogue clock/ watch, timer, hour hand, minute hand, hours, minutes, seconds.</p>	<p>will it be to ...? How long will it take to...? How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, a.m., p.m., clock, clock face, watch, hands, digital/analogue clock/ watch, timer, hour hand, minute hand, hours, minutes, seconds, Roman numerals, 12-hour clock time, 24-hour clock time</p>	<p>longer, takes less time, how long ago? How long will it be to ...? How long will it take to...? How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, a.m., p.m., clock, clock face, watch, hands, digital/analogue clock/ watch, timer, hour hand, minute hand, hours, minutes, seconds, timetable, arrive, depart, Roman numerals, 12-hour clock time, 24-hour clock time</p>	<p>longer, takes less time, how long ago? How long will it be to ...? How long will it take to...? How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, a.m., p.m., clock, clock face, watch, hands, digital/analogue clock/ watch, timer, hour hand, minute hand, hours, minutes, seconds, timetable, arrive, depart, Roman numerals, 12-hour clock time, 24-hour clock time</p>	<p>longer, takes less time, how long ago? How long will it be to ...? How long will it take to...? How often?, always, never, often, sometimes, usually, once, twice, hour, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, a.m., p.m., clock, clock face, watch, hands, digital/analogue clock/ watch, timer, hour hand, minute hand, hours, minutes, seconds, timetable, arrive, depart, Roman numerals, 12-hour clock time, 24-hour clock time, Greenwich Mean Time, British Summer Time, International Date Line</p>
<p><b>Money</b></p>	<p><b>Money</b></p>	<p><b>Money</b></p>	<p><b>Money</b></p>	<p><b>Money</b></p>	<p><b>Money</b></p>
<p>Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? total</p>	<p>Money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? total</p>	<p>Money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? total</p>	<p>Money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? total</p>	<p>Money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? Total, discount, currency</p>	<p>Money, coin, penny, pence, pound, price, cost, buy, bought, sell, sold, spend, spent, pay, Change, dear, costs more, cheap, costs less, cheaper, costs the same as, how much...? How many ...? Total, discount, currency, profit, loss.</p>

