

Mathematics Syllabus – Year 2

2.1 NUMBER AND ALGEBRA

Learning Outcome	Notes
* Counting, properties of numbers and number sequences	
Know the number names and recite them in order to at least 20, from and back to zero.	
2.1.1 Count reliably at least 20 objects. • Describe and extend number sequences:	
2.1.2 Count on and back in ones from any small number, and in tens from and back to zero; count on in twos from zero, then one, and begin to recognise odd or even numbers to about 20 as ‘every other number’; count in steps of 5 from zero to 20 or more, then back again; begin to count on in steps of 3 from zero.	
* Place-value and ordering	
2.1.3 Read and write numerals from 0 to at least 20. • Begin to know what each digit in a two-digit number represents. Partition a ‘teens’ number and begin to partition larger two-digit numbers into a multiple of ten and ones (TU).	
2.1.4 Understand and use the vocabulary of comparing and ordering numbers, including ordinal numbers to at least 20. Use the ‘=’ sign to represent equality. • Compare two familiar numbers, say which is more or less, and give a number which lies between them.	
2.1.5 Within the range 0 to 30, say the number that is 1 or 10 more or less than any given number.	
2.1.6 Order numbers to at least 20, and position them on a number track.	

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2.1 NUMBER AND ALGEBRA (contd)

Learning Outcome	Notes
* Estimating	
<ul style="list-style-type: none"> Understand and use the vocabulary of estimation. Give a sensible estimate of a number of objects that can be checked by counting. 	e.g. up to about 30 objects.
* Understand addition and subtraction	
2.1.7 Understand the operation of addition, and of subtraction (as ‘take away’, ‘difference’, and ‘how many more to make’), and use the related vocabulary.	
<ul style="list-style-type: none"> Begin to recognise that addition can be done in any order. Begin to use the +, – and = signs to record mental calculations in a number sentence, and to recognise the use of symbols such as \square or \triangle to stand for an unknown number. Begin to recognise that more than two numbers can be added together. 	
* Rapid recall of addition and subtraction facts	
2.1.8 Know by heart:	
all pairs of numbers with a total of 10;	e.g. $3 + 7$
addition facts for all pairs of numbers with a total up to at least 5, and the corresponding subtraction facts;	
addition doubles of all numbers to at least 5.	e.g. $4 + 4$
<ul style="list-style-type: none"> Begin to know addition facts for all pairs of numbers with a total up to at least 10, and the corresponding subtraction facts. 	
* Mental calculation strategies (+ and –)	
<ul style="list-style-type: none"> Use knowledge that addition can be done in any order to do mental calculations more efficiently. 	e.g. Put the larger number first and count on in ones; including beyond 10 (e.g. $7 + 5$).

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2.1 NUMBER AND ALGEBRA (contd)

Learning Outcome	Notes
<p>* Mental calculation strategies (+ and –) (contd)</p>	
	<p>e.g. Begin to partition into ‘5 and a bit’ when adding 6, 7, 8 or 9, then recombine</p> $(6 + 8 = 5 + 1 + 3 + 5 = 10 + 4 = 14)$
<ul style="list-style-type: none"> Identify near doubles, using doubles already known. 	<p>e.g. $6 + 5$</p>
<ul style="list-style-type: none"> Add 9 to single-digit numbers by adding 10 then subtracting 1. 	
<ul style="list-style-type: none"> Use patterns of similar calculations. 	<p>e.g. $10 - 0 = 10, 10 - 1 = 9, 10 - 2 = 8 \dots$</p>
<ul style="list-style-type: none"> Use known number facts and place-value to add or subtract a pair of numbers mentally within the range 0 to at least 10, then 0 to at least 20. 	<p>$17 - 4$ seen as $(10 + 7) - 4$ seen as $10 + (7 - 4)$ seen as $10 + 3$ make 13</p>
<ul style="list-style-type: none"> Begin to bridge through 10, and later 20, when adding a single-digit number. 	<p>e.g. Bridging to 10 $8 + 4$ seen as</p> $\begin{array}{c} \text{2} \quad \text{2} \\ \text{---} \\ 8 \quad 10 \quad 12 \end{array}$ <p>e.g. Bridging to 20 $18 + 4$ seen as</p> $\begin{array}{c} \text{2} \quad \text{2} \\ \text{---} \\ 18 \quad 20 \quad 22 \end{array}$

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2.2 MEASURES, SHAPE AND SPACE

Learning Outcome	Notes
<p>* Measures</p>	
<ul style="list-style-type: none"> Understand and use the vocabulary related to length, mass and capacity. 	<p>e.g. Length: long, short; longer than, shorter than ... Mass: heavy, light; heavier than, lighter than ... Capacity: full, empty; nearly full, nearly empty ...</p>
<p>2.2.1 Compare two lengths, masses or capacities by direct comparison; extend to more than two.</p>	
<ul style="list-style-type: none"> Measure using uniform non-standard units or standard units. 	<p>e.g. straws, wooden cubes, plastic weights, yoghurt pots e.g. metre sticks, litre jugs</p>
<p>2.2.2 Suggest suitable standard or uniform non-standard units and measuring equipment to estimate, then measure, a length, mass or capacity, recording estimates and measurements as ‘about 3 beakers full’ or ‘about as heavy as 20 cubes’.</p>	
<ul style="list-style-type: none"> Understand and use the vocabulary related to time. 	
<ul style="list-style-type: none"> Order familiar events in time. 	
<ul style="list-style-type: none"> Know the days of the week and the seasons of the year. 	
<ul style="list-style-type: none"> Read the time to the hour or half hour on analogue clocks. 	
<p>* Shape and space</p>	
<p>2.2.3 Use everyday language to describe features of familiar 3-D and 2-D shapes, including the cube, cuboid, sphere, cylinder, cone ..., circle, triangle, square, rectangle ..., referring to properties such as the shapes of flat faces, or the number of faces or corners ... or the number and types of sides.</p>	
<ul style="list-style-type: none"> Make and describe models, patterns and pictures using construction kits, everyday materials, Plasticine ... 	
<ul style="list-style-type: none"> Fold shapes in half, then make them into symmetrical patterns. 	
<ul style="list-style-type: none"> Begin to relate solid shapes to pictures of them. 	

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2.3 DATA HANDLING

Learning Outcome	Notes
* Organising and using data	
<ul style="list-style-type: none">• Solve a given problem by sorting, classifying and organising information in simple ways.	such as: using objects or pictures, in a list or simple table.
<ul style="list-style-type: none">• Discuss and explain results.	

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2.4 PROBLEM SOLVING

Learning Outcome	Notes
* Making decisions	
<ul style="list-style-type: none"> Choose and use appropriate number operations and mental strategies to solve problems. 	e.g. mental, mental with jottings.
* Reasoning about numbers or shapes	
<ul style="list-style-type: none"> Solve simple mathematical problems or puzzles; recognise and predict from simple patterns and relationships. Suggest extensions. 	e.g. by asking ‘What if ...?’ or ‘What could I try next?’
<ul style="list-style-type: none"> Investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. 	e.g. Number: Make a list of odd numbers less than 20 ... Shapes: Sort shapes with a flat face such as cylinder, cuboid, cone ...
<ul style="list-style-type: none"> Explain methods and reasoning orally. 	
* Problems involving ‘real life’, money or measures	
2.4.1 Use mental strategies to solve simple problems set in ‘real life’, money or measurement contexts, using counting, addition, subtraction, halving or doubling, explaining methods and reasoning orally.	
<ul style="list-style-type: none"> Recognise coins of different values. 	
<ul style="list-style-type: none"> Find totals and change from up to 20c. 	
<ul style="list-style-type: none"> Work out how to pay an exact sum using smaller coins. 	

Opportunities should be sought to link mathematics to other subjects by using the Thematic Approach ... this being “*the kind of pedagogical approach that comes closest to the idea of a holistic education, and the methodology (that) should be the dominant feature of our schools.*” (NMC Creating the Future Together” p. 78) Mathematics contributes to many subjects of the primary curriculum, such as *Language, Science, Art & Craft, Social Studies and Physical Education*, often in practical ways.

Computer Software available in the classroom should be used to enhance, reinforce and consolidate any learning outcomes related to each of the four strands in this syllabus, namely: **Number and Algebra; Measures, Shape and Space; Data Handling; Problem Solving.**