Intent

At Lawnside, our intention is to enable all pupils to meet their maximum potential in Mathematics and become fluent, resilient and independent-thinking mathematicians with the power to reason and deploy their learning in new contexts.

To meet this intention, we employ a Mastery approach to Mathematics. We teach mathematics to whole classes and all children are encouraged to believe that by working hard, persevering and adopting a positive mind-set focused on resilience and growth they can succeed in Maths.

The key elements of a Mastery approach are essential in meeting our intent:

- Maths teaching for mastery rejects the idea that a large proportion of people 'just can't do maths'.
- All pupils are encouraged by the belief that by working hard at maths they can succeed.
- Pupils are taught through whole-class interactive teaching, where the focus is on **all** pupils working together on the same lesson content at the same time, as happens in Shanghai and several other regions that teach maths successfully. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.
- Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- It is recognised that practice is a vital part of learning, but the practice used is **intelligent practice** that both reinforces pupils' procedural fluency and develops their conceptual understanding.
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.

(NCETM, 2016)

We believe that our intent can be met through our Maths curriculum. This is carefully structured to ensure that pupils have the opportunity to meet all national Curriculum

objectives during their time at Lawnside. The timing, order and duration of the learning are deliberately chosen to allow longer time to be spent on topics allowing all pupils the chance to develop deep and meaningful mastery of concept. Our intention is to provide a cumulative Maths curriculum where knowledge and skills are gained, retained and connections are strengthened in future terms and years.

Implementation

The big ideas of Teaching for Maths Mastery are central to the choices we have made to meet our intent:

- representation and structure;
- mathematical thinking;
- fluency;
- variation and
- coherence through small steps

To help fulfil our intent, each Lawnside year group follows a careful journey using Power Maths.

At the heart of Power Maths is a clearly structured teaching and learning process that helps make certain that every child masters each maths concept securely and deeply. For each year group, the curriculum is broken down into core concepts, taught in units. A unit divides into smaller learning steps – lessons. Step by step, strong foundations of cumulative knowledge and understanding are built.

(Power Maths, Pearson)

In planning for each lesson, teachers identify the incremental key learning points (micro-steps) that will be required and decide the order in which to expose the pupils to each key learning point in a carefully ordered episodic fashion during each small step lesson. Potential misconceptions are also thought through during the planning stage and incorporated into the lesson as opportunities for learning. Key vocabulary that will occur during the block is predicted in advance so that the correct terminology can be taught, repeated, moved into active use and contextualized. Planning also deliberately builds in opportunities to expose the underlying structure of the mathematics that allow generalisations to be formulated from reasoning about specific cases.

Lesson delivery involves an initial task; teacher structuring using appropriate representations (concrete, pictorial and abstract) and class recording of the learning; application of the learning with incremental addition of key learning points before pupils have the chance to apply the accumulated learning independently.

Reasoning skills such as pattern spotting, identifying what is the same and what is different, forming conjectures and providing convincing evidence and proof that support mathematical thinking are always promoted in a Lawnside Maths lesson.

Further challenge, extension and deeper thinking tasks are made available to pupils who complete work and challenge will always be present in lessons through the teacher questioning; promoting mathematical thinking and connections; developing reasoning skills and moving from the specific to the general.

At Lawnside, we know that number fluency requires continuous practice. Becoming fluent with number facts helps to avoid cognitive overload as mathematical concepts and contexts become more intricate. As well as including specific number fluency lessons in our curriculum blocks, we also use key points of the school day to allow practice of number bonds and multiplication facts in the form of puzzles, word problems and drills.

Skills and knowledge progression

Reception
Autumn term

Strand	Unit		Week	Weekly title	Early Learning Goal
Number – number and place value	Unit 1	Numbers to 5	1	Counting to 1, 2 and 3	Children count reliably with numbers from 1 to 20, place them in order.
			2	Counting to 4	
			3	Counting to 5	
Number – addition and subtraction	Unit 2	Sorting	4	Sorting into 2 groups	Children explore characteristics of everyday objects.
Number – number and place value	Unit 3	Comparing groups within 5	5	Comparing quantities of identical objects	Pre-requisite to: Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer.
			6	Comparing quantities of non-identical objects	
Number – addition and subtraction	Unit 4	Change within 5	7	One more	Say which number is one more or one less than a given number.
			8	One less	
Measurement	Unit 5	Time	9	My day	Children use everyday language to talk about time to solve problems.

Spring

Strand	Unit		Week	Weekly title	Early Learning Goal
Number – addition and subtraction	Unit 6	Number bonds within 5	1	Introducing the part-whole model	Pre-requisite to: Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer.
Number – number and place value	Unit 7	Numbers to 10	2	Counting to 6, 7 and 8	Children count reliably with numbers from 1 to 20, place them in order.
			3	Counting to 9 and 10	
Number – number and place value	Unit 8	Comparing numbers within 10	4	Comparing groups up to 10	Children explore characteristics of everyday objects.
Number – addition and subtraction	Unit 9	Addition to 10	5	Combining 2 groups to find the whole	Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer.
Number – addition and subtraction	Unit 10	Number bonds to 10	6	Using a ten frame	Pre-requisite to: Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer.
			7	The part-whole model to 10	
Geometry – properties of shape	Unit 11	Shape and space	8	Spacial awareness	Children explore characteristics of everyday objects and shapes and use mathematical language to describe them.
			9	3D shapes	
			10	2D shapes	

Summer

Strand	Unit		Week	Weekly title	Early Learning Goal
Geometry – properties of shape	Unit 12	Exploring patterns	1	Making simple patterns	Children recognise, create and describe patterns.
			2	Exploring more complex patterns	
Number – addition and subtraction	Unit 13	Counting on and counting back	3	Adding by counting on	Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer.
			4	Taking away by counting back	
Number – number and place value	Unit 14	Numbers to 20	5	Counting to 20	Children count reliably with numbers from 1 to 20, place them in order.
Number – multiplication and division	Unit 15	Numerical patterns	6	Doubling	They solve problems, including doubling, halving and sharing.
			7	Halving and sharing	
			8	Odds and evens	
Number – number and place value	Unit 16	Measure	9	Length, height and distance	Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
			10	Weight	
			11	Volume and capacity	

Year 1

Textbook	Strand	Unit	Number of Lessons	
Textbook A / Practice Pupil Book A (Term 1)	Number – number and place value	1	Numbers to 10	12
	Number – number and place value	2	Part-whole within 10	5
	Number – addition and subtraction	3	Addition and subtraction within 10 (1)	6
	Number – addition and subtraction	4	Addition and subtraction within 10 (2)	12
	Geometry – properties of shape	5	2D and 3D shapes	5
	Number – number and place value	6	Numbers to 20	7
Textbook B / Practice Pupil Book B (Term 2)	Number – addition and subtraction	7	Addition within 20	6
	Number – addition and subtraction	8	Subtraction within 20	8
	Number – number and place value	9	Numbers to 50	11
	Measurement	10	Introducing length and height	5
	Measurement	11	Introducing weight and volume	7
Textbook C / Practice Pupil Book C (Term 3)	Number – multiplication and division	12	Multiplication	6
	Number – multiplication and division	13	Division	5
	Number – fractions	14	Halves and quarters	5
	Geometry – position and direction	15	Position and direction	3
	Number – number and place value	16	Numbers to 100	9
	Measurement	17	Time	7
	Measurement	18	Money	3

Year 2

Year 2 are following the Power Maths, however there is a realisation that due to SATS there is a need to move some of the topics to ensure enough curriculum coverage of the objectives. Therefore areas such as time and measuring are met earlier in the year than as proposed and time is revisited

Textbook	Strand	Unit	Number of Lessons	
Textbook A / Practice Workbook A (Term 1)	Number – number and place value	1	Numbers to 100	10
	Number – addition and subtraction	2	Addition and subtraction (1)	12
	Number – addition and subtraction	3	Addition and subtraction (2)	9
	Measurement	4	Money	9
	Number – multiplication and division	5	Multiplication and division (1)	9
Textbook B / Practice Workbook B (Term 2)	Number – multiplication and division	6	Multiplication and division (2)	9
	Statistics	7	Statistics	7
	Measurement	8	Length and height	5
	Geometry – properties of shape	9	Properties of shapes	12
	Number – fractions	10	Fractions	14
Textbook C / Practice Workbook C (Term 3)	Geometry – position and direction	11	Position and direction	4
	Number – addition and subtraction	12	Problem solving and efficient methods	12
	Measurement	13	Time	9
	Measurement	14	Weight, volume and temperature	10

Year 3

Textbook	Strand	Unit		Number of Lessons
Textbook A / Practice Book A (Term 1)	Number – number and place value	1	Place value within 1,000	11
	Number – addition and subtraction	2	Addition and subtraction (1)	10
	Number – addition and subtraction	3	Addition and subtraction (2)	9
	Number – multiplication and division	4	Multiplication and division (1)	15
Textbook B / Practice Book B (Term 2)	Number – multiplication and division	5	Multiplication and division (2)	14
	Measurement	6	Money	5
	Statistics	7	Statistics	5
	Measurement	8	Length	11
	Number – fractions	9	Fractions (1)	11
Textbook C / Practice Book C (Term 3)	Number – fractions	10	Fractions (2)	9
	Measurement	11	Time	11
	Geometry – properties of shapes	12	Angles and properties of shapes	9
	Measurement	13	Mass	6
	Measurement	14	Capacity	6

Year 4

Textbook	Strand	Unit		Number of Lessons
Textbook A / Practice Book A (Term 1)	Number – number and place value	1	Place value – 4-digit numbers (1)	9
	Number – number and place value	2	Place value – 4-digit numbers (2)	9
	Number – addition and subtraction	3	Addition and subtraction	15
	Measurement	4	Measure – perimeter	5
	Number – multiplication and division	5	Multiplication and division (1)	11
Textbook B / Practice Book B (Term 2)	Number – multiplication and division	6	Multiplication and division (2)	15
	Measurement	7	Measure – area	5
	Number – fractions (including decimals)	8	Fractions (1)	7
	Number – fractions (including decimals)	9	Fractions (2)	8
	Number – fractions (including decimals)	10	Decimals (1)	10
Textbook C / Practice Book C (Term 3)	Number – fractions (including decimals)	11	Decimals (2)	7
	Measurement	12	Money	9
	Measurement	13	Time	5
	Statistics	14	Statistics	5
	Geometry – properties of shapes	15	Geometry – angles and 2D shapes	10
	Geometry – position and direction	16	Geometry – position and direction	6