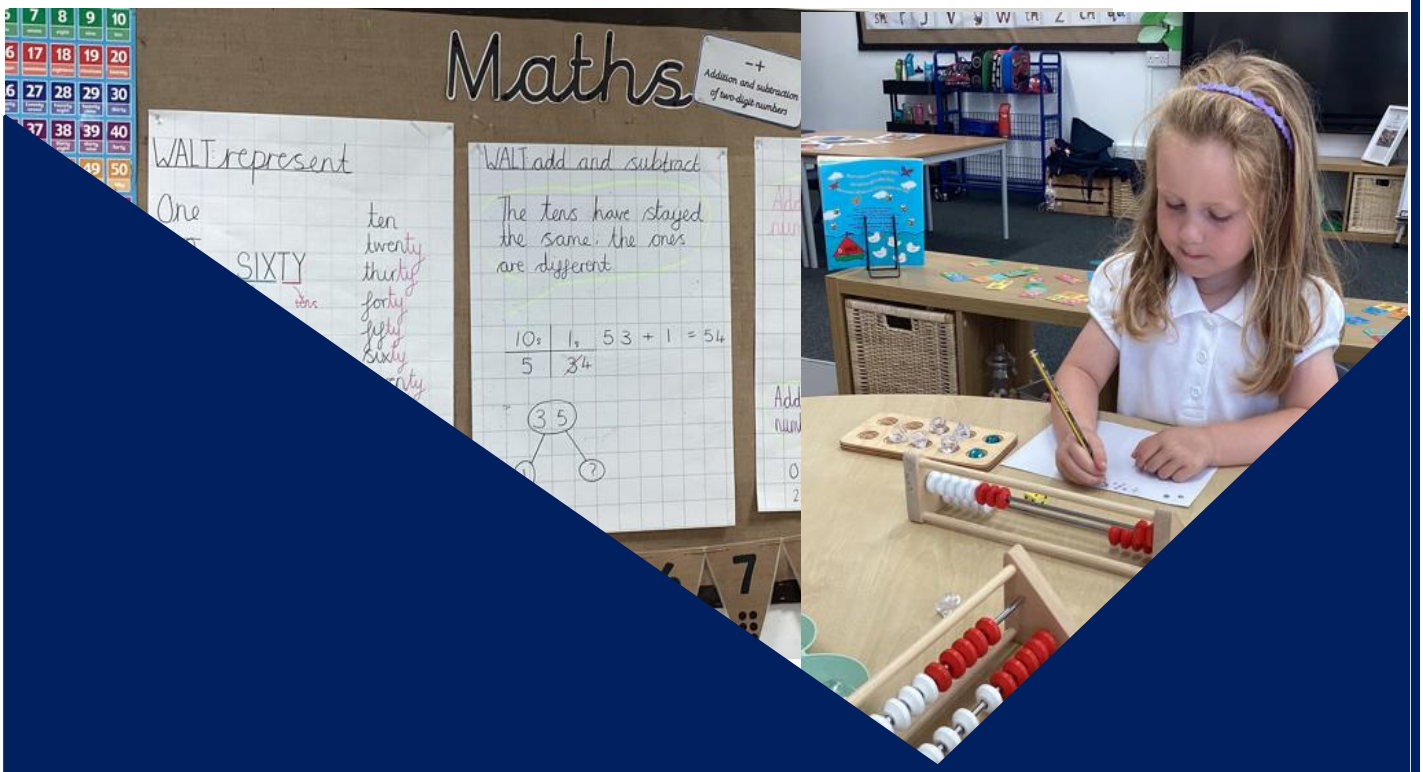
BERROW PRIMARY
Church Academy

Maths
At Berrow



'Mathematics is, in its own way, the poetry of logical ideas.'
Albert Einstein

At Berrow, it is our belief that all children have the right and the capabilities to become confident and competent mathematicians. Our aim is to develop in each child a deep, conceptual understanding of mathematical skills, knowledge and vocabulary through a mastery approach to maths. Our children are taught the same age-appropriate content as their peers through sequences of connected lessons using manipulatives and representations that take them through a concrete-pictorial-abstract approach to understanding key mathematical concepts.

Curriculum

The National Curriculum sets out three main aims for the teaching of mathematics.
These are **fluency, reasoning** and **problem solving**.

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships a generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non routine problems with increasing sophistication, including breaking down proble into a series of simpler steps and persevering in seeking solutions

Teachers at Berrow have a strong grasp of the National Curriculum and a clear understanding of what children of different ages should achieve. The aims and outcomes of the National Curriculum are achieved through our whole-school mastery approach to the teaching of maths.

A mastery approach

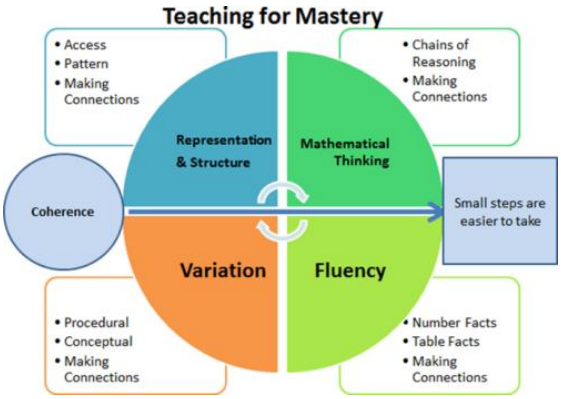
'Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material.' NCETM

Maths is organised in line with our trust policy and follows the NCETM's Curriculum Prioritisation scheme. Teachers make excellent use of the professional mastery development materials provided in order to become skilled mathematicians themselves. We plan using the guidelines and resources set out by the scheme but this is added to and tailored to meet the needs of our children

A range of specifically chosen, quality resources are selected in order to cover key objectives using small steps. Shared schemes (created in partnership with our trust colleagues) such as KS2 revision and Secondary-Ready transition learning are used to provide consistency for all our pupils.

The 5 Big Ideas of Mastery

The mastery approach to maths is underpinned by five key ideas; representation and structure, mathematical thinking, variation, coherence and fluency.



Maths Hubs

Our school maths champion works closely with the Boolean Maths Hub; as a sustaining mastery school, we are invited to take part each year in a range of workgroups where teachers are given regular CPD and opportunities to work with maths specialists across the South West. These workgroups are open to any teachers who may require additional professional development in maths and cover a variety of different concepts and approaches.

Teaching and Learning

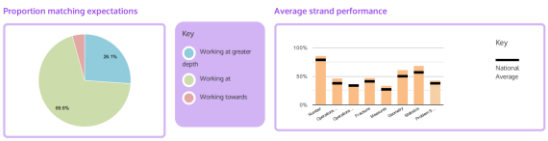
In all year groups, a range of manipulatives are used to ensure children have the opportunity to work practically with number concepts before moving on to pictorial and abstract representations. Misconceptions are planned for and children are encouraged to make links between the different mathematical concepts they learn. Mathematical oracy sits at the heart of our teaching and learning; early on, children are taught and encouraged to use correct mathematical terms and are given opportunities to learn and hone skills in 'maths talk'.

Throughout their learning journey, it is our aim that children make strong links between key concepts in maths. They become confident in explaining their mathematical thinking and reasoning using vocabulary which demonstrates their understanding. They are able to recall specific knowledge required for solving problems and confidently draw upon existing skills in order to solve problems.

Assessing Maths

Teachers assess the children against the EYFS profile, the end of KS1 and end of KS2 National Curriculum frameworks. In addition to this, formative assessment for learning opportunities are built in to teaching through our engagement with Walkthrus and Ready to Progress materials (specific to maths).

Weekly assessments of multiplication tables recall take place in Year 4 in preparation for the Multiplication Tables Check. Termly assessing takes place for all children across each year group from 1-6. Use of PUMA maths assessments allow teachers to assess children's attainment throughout the year. These assessments are used to inform lesson planning and support children in key areas identified through question level analysis from such assessments.



Home School Partnership

At Berrow, we believe that building strong home-school relationships are key to strengthening primary maths.

In order to support this relationship, we share our maths intent and mastery approach with parents and use regular communication opportunities to inform them about how maths is taught in our school.

We understand that parents may have been taught maths using a different approach to the ones now used and recognise that parents' own experiences of maths are not always remembered positively.

We offer our Reception parents information evenings where they can learn more about the approaches used and invite parents of KS2 children to see Mastering Number in action in order to support children's recall of multiplication tables at home.

Parents are encouraged to support their children in maths at home through use of apps such Prodigy One Minute Maths, Hit the Button, Numbots and Times Tables Rockstars which support the learning taking place in the classroom.

Maths across the curriculum

'Science is reasoning; reasoning is mathematics and therefore science is mathematics.'
Marshall Harvey Stone

Across the curriculum, children are given opportunities to use and apply their mathematic skills in different ways.

Children in Early Years are immersed through their continuous provision in number that relates to stories, real-world events and experiences.

Statistics is taught separately from the maths lesson, as are historical concepts such as Roman Numerals which is taught alongside the Romans as part of a learning enquiry. Opportunities to link science and geography through maths are sought out by teachers to give children rich and real learning opportunities to collect and interpret data, often linked to other areas of the curriculum.

Fluency scheme

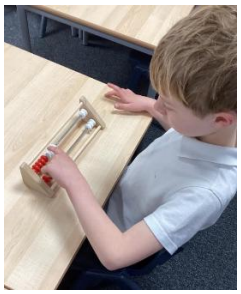
At Berrow, we understand that developing automaticity, fluency and number sense is vital to becoming a confident and capable mathematician. We prioritise the 'building blocks' of mathematics by following the NCETM's Mastering Number programs. This is a highly successful and Maths Hubs-recommended program that ensures children are given a successful start to understanding number relationships.

This program is in addition to the daily maths lesson which focuses on one small step. Although conceptual fluency is also practised as part of the daily mastery lesson, we believe that removing the 'cognitive overload' allows children to focus entirely on the small step being taught.

Mastering Number KS1

Mastering Number KS1 aims to secure firm foundations in number sense with a focus on additive relationships.

All of our mastering number lessons a taught using a consistent and repeated approach. Each year group is provided with clear planning and resources for four sessions per week. Physical manipulatives are used to enhance children's understanding; children are each provided with a rekenrek (like an abacus) and are taught to use this in Reception. The use of this resource is continued throughout the three-year project in order to build understanding.



All staff who teach using the mastering number programme have had training to give them the skills, knowledge and confidence to deliver the program successfully.

Staff are given opportunities to engage with training videos and materials via the NCETM's axis hub and are encouraged to watch other members of staff delivering sessions also.

Mastering Number KS2

'Knowledge of multiplication and division and its applications forms the single most important aspect of the KS2 curriculum, and is the gateway to success at secondary school.' NCETM

Mastering Number at KS2 offers a full weekly fluency program for Years 3, 4 and 5 with a focus on multiplicative relationships. It enables pupils to develop fluency and automaticity in the recall of the core multiplication facts in order for them to have these at their fingertips as they move through upper key stage two.

Pupils in year four enjoy using the 'Going for Gold' approach where they make and independently use flash cards in order to learn multiplication facts in a very structured way using sound bites. Teacher-modelled recall of factor, factor, product (using smallest factor first) enables pupils to become confident in their times tables facts up to 12x12.

This approach is underpinned early on in year four by multiplicative understanding, which is then continued and furthered in the year five program.

Every Child Matters

At Berrow, every child matters to us. We recognise that some of our children may need additional support in maths and we make use of the NCETM and Department for Education 'Ready to Progress' scheme in order to scoop them up and close the gaps.

In line with our 'keep- up not catch- up' approach, we ensure that as well as being exposed to age-related teaching and learning, children needing additional support are given further opportunities to secure mathematical concepts.

Trained support staff or class teachers use the Ready to Progress materials to compliment and enhance the learning in the classroom. This may be delivered on a one to one basis or in a small group outside of the daily mastery lesson.

What is Ready to progress?

Department for Education

National Centre for Excellence in the Teaching of Mathematics

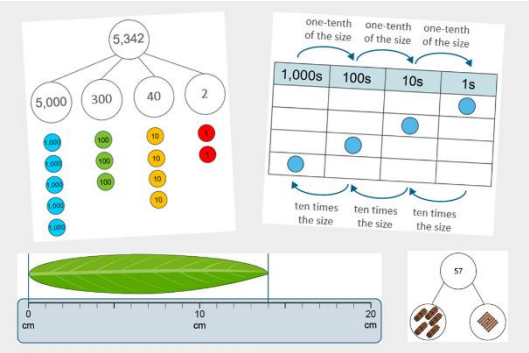
Mathematics guidance: key stages 1 and 2

Non-statutory guidance for the national curriculum in England

Ready to Progress was created in order to bring greater coherence to the National Curriculum by exposing core concepts in the progression of outcomes from years one to six.

It summarises the key knowledge and understanding within each year group needed in order to progress to the next stage. It is typically used with children who:

- are working below age-related expectations
- have missed schooling or are late arrivals into school
- are new to the UK education system
- are learning English as an additional language.



Ready to Progress identifies the most important concepts as well as knowledge and understanding and makes connections between these topics.

Each section contains clear teacher-guidance, language foci and models and representations essential to the understanding of the mathematical concept. They are enhanced by a set of PowerPoint presentations as well as assessment questions.

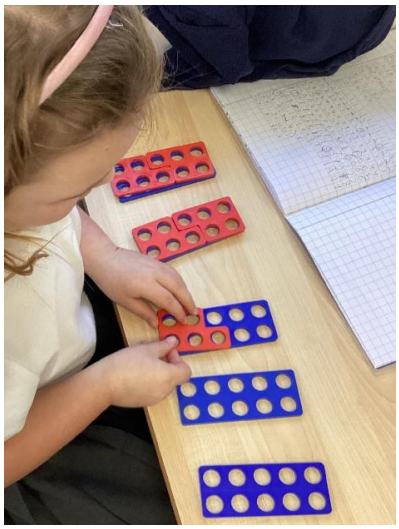
Children with special education needs will also make use of the Ready to Progress scheme; they will learn the same key concepts in a time frame that suits them as learners.

These materials compliment the school's Curriculum Prioritisation scheme as they make use of the same language and representations.

Timetabling

Preschool

Continuous provision which includes a mastery-rich environment	Daily
Mastery maths	Daily
Songs and Rhyme	Daily



Reception and Key Stage 1

Phonics is taught daily across Reception and Key Stage 1 for the first 40 minutes of each day until children move towards whole class reading in Year 2 during the Spring Term.

Whole class fluency – Mastering Number	Four sessions per week
Mastery maths	Daily
Arithmetic and number sense	Daily – up to 30 minutes

Key Stage 2

The teaching of whole class reading involving each strand; comprehension, fluency and vocabulary is taught across key stage 2 for 40 minutes each day.

Whole class fluency – Mastering Number	Daily (Y3/4/5 Mastering Number)
Mastery maths	Daily
Arithmetic and number sense	Daily – up to 30 minutes

Little Learners Preschool

Mastery Maths

A clear progression from two year olds to four year olds sets out the expectations of what children in our nursery will be offered and will be able to achieve.

Early experiences with number

Our number-rich nursery has plenty of opportunities for children to explore number, both inside and outside. Bowls of natural and colourful items to count are placed so that children can play independently. Children are presented with adult-led opportunities to explore, talk about and experience both numerals and quantities of objects.

Number rhymes, games and stories

Number-rich stories and rhymes are introduced so that children gain a feel for number in the real world. Stories and rhymes are acted out through role-play and children are encouraged to use number in their independent games.

Maths through play

Engaging games are provided that make use of counting, number and dice so that children may experience number in a variety of different contexts.

Fluency

Our youngest learners start their fluency journey through …

- Daily calendar check ins
- Nursery rhymes and songs
- Daily counting
- Mathematical provision

Home school partnership

From the very start of our children's journey, we aim to develop a strong home school partnership to develop children's awe, wonder and mathematical curiosity. In Little Learners, we provide children with half term learning challenge packs to help children to continue their learning at home.

Mathematics

	Two year olds			Nursery			Preschool		
	Autumn Term	Spring Term	Summer Term	Autumn Term	Spring Term	Summer term	Autumn Term	Spring Term	Summer Term
Number	Say some counting words Takes part in 'counting-like' activities (e.g. pointing to an object and saying a number name)	Joins in with finger and action rhymes Hands start to operate independently when engaged in an activity that uses both Looks closely at small items When holding mark making equipment, child is able to start making connections between their	Looks closely at small items When holding mark making equipment, child is able to start making connections between their	Join in with number songs and rhymes, introducing Maths vocabulary Exposure of the numbers 1 –3 Counting groups of objects up to 5 with adult support and guidance Show finger numbers for 1,2,3	Developing independence with counting groups of up to 5 objects Starting to understand the cardinal rule of number Develop subitising skills and faster recall of amounts up to 3 Show finger numbers up to 4	Develop fast recognition of up to 3 objects, without having to count them individually ('subitising') Say one number for each item in order up to 5: 1,2,3,4,5	Develop fast recognition of up to 3 objects, without having to count them individually ('subitising')	Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')	Show 'finger numbers' up to 5 Link numerals and amounts: for example, showing the right number of objects to match the numeral up to 5 Recite some numbers beyond 5 Join in and sing counting songs and number rhymes Listen to and enjoy stories that involve counting
Numerical pattern	Enjoys playing with matching shape games	Constructs with 3D shapes Uses containers when engaging with sensory play (e.g. water, sand, dried goods). Responds to words such as "lots" or "more"	To be supported to use the classroom visual timetable to understand what is happening now and what will happen next.	Daily routines in Nursery (e.g. tidying up – sorting) Sort objects into colour groups Introduction to comparative language through stories related to size	Order and sort by size Interest shown in mark making numbers or tallies Use language related to capacity (e.g. full/empty) Use language related to weight (e.g. heavy/light)	Experiment with their own symbols and marks as well as numerals Solve real world mathematical problems with numbers up to 5 Compare quantities using language: 'more than', 'fewer than' Talk about and identify the patterns around them ABAB Patterns using objects or 2D Shapes	Introduction to ABAB patterns using colours (e.g. red, blue, red, blue)	Extend and create ABAB patterns – stick, leaf, stick, leaf	Notice and correct an error in a repeating pattern Begin to describe a sequence of events, real or fictional, using words such as 'first' and 'then'

Reception

Mastery Maths

Early maths at Berrow is split into six key areas. These are:

- Cardinality and counting
- Comparison
- Composition
- Pattern
- Shape and Space
- Measure

In line with the NCETM guidance and Development Matters, children work towards the Early Learning Goals for maths using an repetitive approach to the six areas listed above.

ELGs for maths

Number

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical patterns

- 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 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.

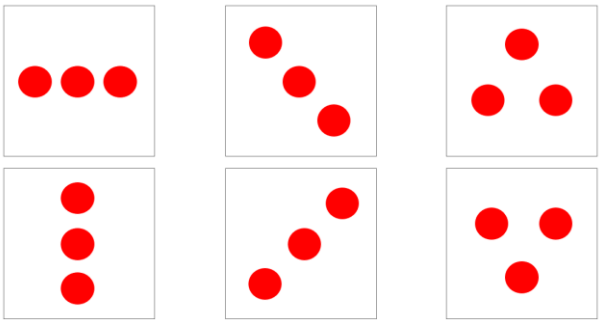
Children work as a whole class and in small groups to develop a strong grounding in number sense.

Fluency

Mastering Number begins with the ability to identify when a set of objects can be subitised or when counting is needed. Children are exposed to different arrangement of numbers including dice and are encouraged to look for smaller numbers 'hiding' inside larger ones.

Children continue to develop these skills within and beyond 5 and begin to identify missing parts for numbers within 5. There is a focus on equal and unequal groups when comparing numbers.

Children consolidate counting skills and develop the ability to compare quantities as well as magnitude – e.g. knowing that 8 is quite a lot more than 2 but 4 is only a little bit more than 2.



Home school partnership

A home-school learning partnership is strongly encouraged in maths. Children are advised to make use of apps such as One Minute Maths and are given opportunities to practice number sense through the Mastering Number at Home materials which are provided to families. We also invite our families in to see 'Maths in action' so that they are able to further support their children at home.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Cardinality and counting	Counting: saying number words in sequence Counting: tagging each object with one number word	Counting: knowing the last number counted gives the total so far	Subitising: recognising small quantities without needing to count them all Numeral meanings	Conservation: knowing that the number does not change if things are rearranged (so long as none have been added or taken away)	Subitising: recognising small quantities without needing to count them all Numeral meanings	Counting: saying number words in sequence
Comparison	More than/less than	Identifying groups with the same number of things	Comparing numbers and reasoning	Knowing the 'one more than/one less than' relationship between counting numbers	More than/less than	Comparing numbers and reasoning
Composition	Part–whole: identifying smaller numbers within a number (conceptual subitising – seeing groups and combining to a total)	Part–whole: identifying smaller numbers within a number (conceptual subitising – seeing groups and combining to a total)	Inverse operations	A number can be partitioned into different pairs of numbers	A number can be partitioned into more than two numbers	Number bonds: knowing which pairs make a given number
Pattern	Continuing, copying, making own and spotting an error in an AB pattern	Identifying the unit of repeat Continuing an ABC pattern Continuing a pattern which ends mid-unit	Making their own ABB, ABBC patterns Spotting an error in an ABB pattern	Symbolising the unit structure Generalising structures to another context or mode	Making a pattern around a border with a fixed number of spaces Making a pattern which repeats around a circle	Pattern-spotting around us
Shape and Space	Developing spatial awareness: experiencing different viewpoints	Developing spatial vocabulary Representing spatial relationships	Shape awareness: developing shape awareness through construction	Identifying similarities between shapes	Showing awareness of properties of shape	Describing properties of shape
Measures	Recognising attributes	Comparing amounts of continuous quantities	Showing awareness of comparison in estimating and predicting Comparing indirectly	Recognising the relationship between the size and number of units Beginning to use units to compare things	Beginning to use time to sequence events	Beginning to experience specific time durations

Year 1

Maths Curriculum Year 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Unit 1 Previous Reception experiences and counting within 100					Unit 2 Comparison of quantities and part-whole relationships			Unit 3 Numbers 0-5		Unit 10 Position and direction	Assessment Unit 11 Time	Revise, reflect, review
Term 3/4	Unit 4 Recognise, compose, decompose and manipulate 2D and 3D shapes			Unit 5 Numbers 0-10		Unit 6 Additive structures						Assessment Unit 11 Time	Revise, reflect, review
Term 5/6	Unit 7 Addition and subtraction facts within 10				Unit 8 Numbers 0-20			Unit 9 Unitising and coin recognition				Assessment Unit 11 Time	Revise, reflect, review

Mastery Maths

Children follow our curriculum prioritisation scheme to build upon experiences of maths in the early years. They are quickly introduced to whole-class mastery lessons where they explore each concept set out by the scheme using a set of well-planned and carefully constructed lessons that are underpinned by mathematical pedagogy.

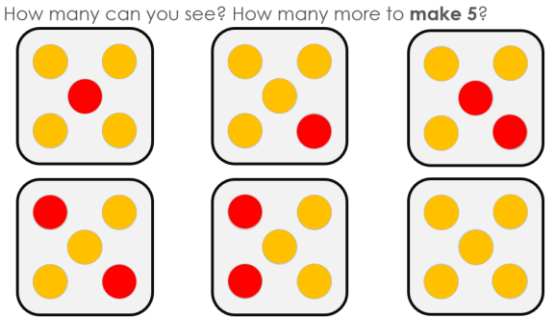
Manipulatives such as counters, tens frames, rekenreks and numicon support conceptual understanding and help children to uncover the structure of the mathematical concept they are learning.

Fluency

Mastering Number builds upon the learning from the early years with the consolidation of subitising within 5 and exploring the composition of numbers within 10.

Initially, they are taught the position of these numbers in the linear number system before developing understanding of the numbers 6 to 9 using the 'five and a bit' structure. Children are introduced to the idea of one more and one less and connect this to the order of numbers within 10.

They then continue to explore numbers within 20 and will begin to connect addition and subtraction expressions through number stories.



Home school partnership

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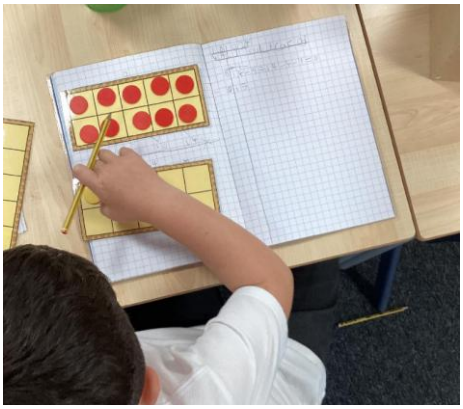


Year 2

Maths Curriculum Year 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Unit 1 Numbers 1-100				Unit 2 Calculations within 20			Unit 3 Add within 10	Unit 4 Addition and subtraction of two-digit numbers		Unit 12 Position and direction	Assessment Unit 11 Time (x3 lessons)	Revise, reflect, review
Term 3/4	Unit 5 Introduction to multiplication							Unit 6 Introduction to division structures		Unit 7 Shape		Assessment Unit 11 Time (x3 lessons)	Revise, reflect, review
Term 5/6	Unit 8 Addition and subtraction of two-digit numbers			Unit 9 Money	Unit 10 Fractions		Unit 12 Position and direction	Unit 13 Multiplication and division			Unit 14 Sense of measure	Assessment Unit 14 cont.	Revise, reflect, review

Mastery Maths

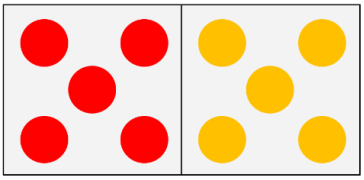
Throughout year two, children continue to develop fluency with whole numbers, counting and place value. They are taught to use the four operations through a practical approach using concrete objects and manipulatives as well as informal jottings and representations. Children are taught to develop their ability to recognise, describe, compare and write numbers and shapes. They experience a range of measures through practical activities in the mastery lesson.

By the end of KS1, our children can confidently recall number bonds to 20 and show a precise understanding of place value.

Fluency

In year 2, pupils have the opportunity to consolidate understanding and recall of number bonds within 10. They begin comparing numbers using the language and symbols of comparison (< > =). Children review the structure of odd and even numbers and explore how numbers can be composed of odd and even parts.

Pupils learn to identify doubles and calculate near doubles and use known bonds within 10 to calculate within 20. Pupils explore a range of strategies to subtract across the 10 boundary.



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Year 3

Home school partnership

Maths Curriculum Year 3

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Unit 1 Adding and subtracting across 10		Unit 2 Numbers to 1,000									Assessment Unit 2 recap.	Revise, reflect, review
Term 3/4	Unit 5 Right angles		Unit 4... additive relationships			Unit 5 Column addition		Unit 6 2,4,8 times tables			Unit 7 Column subtraction	Assessment Unit 7 recap.	Revise, reflect, review
Term 5/6	Unit 8 Unit fractions				Unit 9 Non unit fractions				Unit 10 Parallel and perpendicular sides in polygons		Unit 11 time	Assessment Unit 11 recap.	Revise, reflect, review

Mastery Maths

In year 3, children are introduced to the formal method of column addition and column subtraction through a series of small steps. This understanding is underpinned through the use of manipulatives and representations.

Children begin to explore unit and non-unit fractions as well as patterns in the connected 2,4 and 8 times tables which builds upon their ability to count in equal groups.

Children are given opportunities to reason and problem solve in order to apply their skills in a range of situations and to a range of standard and non-standard problems.

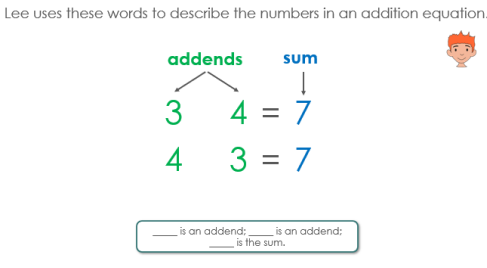
Fluency

Through the mastering number program in year three, children explore the fact that addition is commutative and connected language related to addition and subtraction to the part-part-whole model they have used across KS1.

They continue to develop understanding of the additive relationship through exploring odd and even structures as well as doubles.

Children develop automaticity in the addition fact tables and continue to explore composition of numbers up to 10.

They are introduced to subtraction as the 'difference' and develop effective strategies in order to add and subtract successfully.



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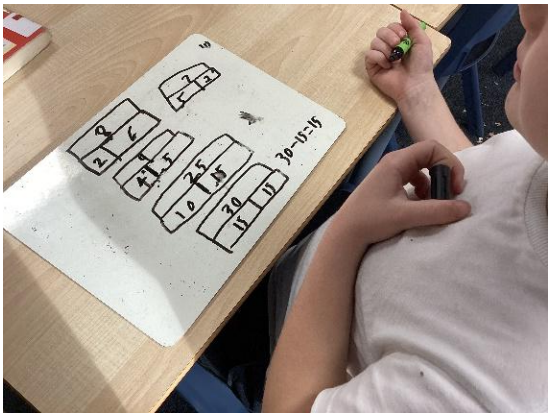
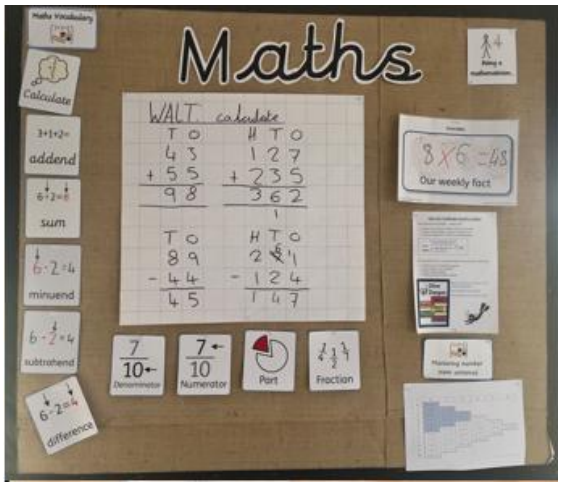




Year 4

Maths Curriculum Year 4

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Unit 1 Review of column addition and subtraction			Unit 2 Numbers to 10,000					Unit 3 Perimeter		Unit 4 3,6,9 times tables	Assessment Unit 4 cont.	Revise, reflect, review
Term 3/4	Unit 4 cont. 3,6,9 times tables		Unit 5 7 times table and patterns	Unit 6 understanding and manipulating multiplicative relationships						Unit 7 coordinates		Assessment Unit 8 review of fractions	Revise, reflect, review
Term 5/6	Unit 8 cont.	Unit 9 Fractions greater than 1					*MTC week*	Unit 10 Symmetry in 2D shapes		Unit 11 Time	Unit 12 Division with remainders	Assessment Unit 12 cont.	Revise, reflect, review

Mastery Maths

Throughout year 4, children will begin to develop a deeper understanding of the multiplicative relationship. Through a series of linked units that compliment mastering number fluency, they will explore the connected 3,6 and 9 times table as well as the 7 times table and square number patterns.

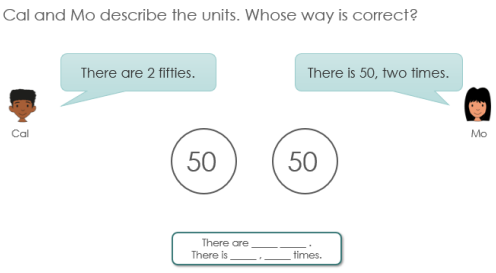
Children will begin exploring multiplication calculations beyond 12x12 using manipulatives, representations and partitioning as a strategy using known facts. They will be introduced to division with remainders by drawing upon existing knowledge of division rules and using physical resources and deepen their understanding of fractions greater than one.

Fluency

Mastering Number KS2 begins with the idea that we can represent 'many as 1' using unitised counters and gestures. Children explore the 'five and a bit' structure learned in KS1 to double and connect this to recalling products.

Pupils explore the distributive property to explore x9, x11 and x12 facts before entering the Going for Gold stage. Children learn the CMF (core multiplication facts) through the introduction of two facts each week. Daily practise and application of facts to solve problems are offered in order to gain confidence.

By the end of year four, the aim is that children will become fluent in the automatic recall of all multiplication facts up to 12x12.



Home school partnership

A home-school learning partnership is strongly encouraged in maths. Children are advised to make use of apps such as Top Marks, Prodigy and TTRS. We also invite our families in to see 'Maths in action' so that they are able to further support their children at home.

Year 5

Maths Curriculum Year 5

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Decimal fractions Unit 1				Money Unit 2		Negative numbers Unit 3 *(include place value not covered by NCETM)*			Short multiplication and division Unit 4		Assessment Unit 4 cont.	Revise, reflect, review
Term 3/4	Short multiplication and division Unit 4 cont.		Area and scaling Unit 5*(include estimating volume not covered by NCETM)*				Calculating with decimal fractions Unit 6			Factors, multiples and primes Unit 7		Assessment Unit 7 cont.	Revise, reflect, review
Term 5/6	Factors, multiples and primes Unit 7	Fractions Unit 8							Converting units Unit 9		Angles Unit 10	Assessment Unit 10 cont.	Revise, reflect, review

Mastery maths

In year five, children are introduced to the formal methods of short multiplication and short division using a cohesive small steps-approach underpinned by carefully selected manipulatives as well as representations to aid understanding.

Children learn decimal fractions and connect this to money and are introduced to the concept of negative numbers.

Multiplicative understanding from year five is built upon as children explore area and scaling. Fractions are explored in more depth and children extend their understanding of factors and multiples to learn about prime numbers up to 100.

Fluency

Children build upon their recall of multiplication facts from year five and apply these in a problem solving approach to fluency. They make connections between multiplication and division contexts and explore the scaling relationship using ratio tables. They extend their understanding of multiplying and dividing by 10 and 100 to multiplying and dividing by 1/10 and 1/100.

They find unit fractions of numbers and connect this to partitive and quotative division. Children deepen their understanding of divisibility rules and explore multiplicative composition.

Let's complete the grid together.

	factor	factor	product
factor	1	a	a
factor	345	1	345
product	345	a	

Home school partnership

A home-school learning partnership is strongly encouraged in maths. Children are advised to make use of apps such as Top Marks, Prodigy and TTRS. We also invite our families in to see 'Maths in action' so that they are able to further support their children at home.

Year 6

Maths Curriculum Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Term 1/2	Unit 2 Multiples of 1,000	Unit 1 Calculating using knowledge of structures				Unit 3 Numbers up to 10,000,000			Unit 4 Draw, compose, decompose shape		Unit 9 Ratio and proportion	Assessment	Unit 9 Ratio and proportion
Term 3/4	Unit 5 Multiplication & Division				Unit 6 Area, perimeter, position & direction	Unit 7 Fractions & percentages						Assessment	Unit 10 Calculating using knowledge of structures
Term 5/6	Unit 11 Solving problems with two unknowns	Unit 12 Order of operations	Unit 13 Mean average	Summative assessment	TPLT Secondary-Ready Scheme								

Mastery Maths

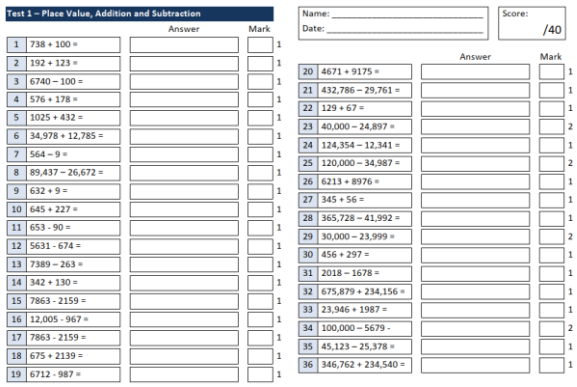
In year 6, children are introduced to the formal written methods for long multiplication and long division. They learn to manipulate fractions by dividing fractions by whole numbers, adding, subtracting and multiplying fractions by other fractions.

Children are introduced to ratio to further deepen their multiplicative understanding and explore the additive relationship further through algebra.

By the end of KS2, children can use algebra as a means for solving a variety of problems and are fluent in written methods for all four operations.

Fluency

In Year 6, children are taught in a cohesive way through a connected approach that begins by practising what they already know. Each week, a teaching session focuses on one key area, such as missing number problems, and children are given guidance as well as opportunities to practise. Later in the week they are given a 40 question test that focuses solely on concepts they have already learned, giving them the opportunity to practice accuracy as well as develop speed. Concepts are added in to the tests as they are studied and consolidated.



Test 1 – Place Value, Addition and Subtraction

Name: _____ Date: _____ Score: /40

		Answer	Mark			Answer	Mark
1	738 + 100 =		1	20	4671 + 9175 =		1
2	192 + 123 =		1	21	432,786 – 29,761 =		1
3	6740 – 100 =		1	22	129 + 67 =		1
4	576 + 178 =		1	23	40,000 – 24,897 =		2
5	1025 + 432 =		1	24	124,354 – 12,341 =		1
6	34,978 + 12,785 =		1	25	120,000 – 34,987 =		2
7	564 – 9 =		1	26	6213 + 8976 =		1
8	89,437 – 26,672 =		1	27	345 + 56 =		1
9	632 + 9 =		1	28	365,728 – 41,992 =		1
10	645 + 227 =		1	29	30,000 – 23,999 =		2
11	653 - 90 =		1	30	456 + 297 =		1
12	5631 - 674 =		1	31	2018 – 1678 =		1
13	7389 – 263 =		1	32	675,879 + 234,156 =		1
14	342 + 130 =		1	33	23,946 + 1987 =		1
15	7863 - 2159 =		1	34	100,000 – 5679 -		2
16	12,005 - 967 =		1	35	45,123 – 25,378 =		1
17	7863 - 2159 =		1	36	346,762 + 234,540 =		1
18	675 + 2139 =		1				
19	6712 - 987 =		1				

Home school partnership

A home-school learning partnership is strongly encouraged in maths. Before the end of term two, children are given maths SATs booklets that contain arithmetic, reasoning and problem solving questions to support understanding in the classroom. Children are provided with revision tasks throughout the year.

In addition, children are advised to make use of apps such as Top Marks, Prodigy and TTRS. We also invite our families in to see 'Maths in action' so that they are able to further support their children at home.

Individual tutoring is offered to children who are working below age-related expectations and those who require extra support to increase in confidence to help them reach their full potential.

Lastly, children use Springboard – learning by questions to revise and consolidate learning.