

WILLIAM LILLEY INFANT AND NURSERY SCHOOL



MATHS AND CALCULATIONS POLICY 2026

The aims of this policy

This policy takes a Mastery approach, and the aim is to ensure all children leave our school with a secure understanding of the four operations and can confidently use both the written and mental calculation strategies listed in a range of contexts. By following this calculations policy we will ensure consistent strategies, models and images are used across the school to embed and deepen children's learning and understanding of mathematical concepts.

This policy has been largely adapted from the White Rose Maths Hub Calculation Policy with further material added. It is a working document and will be revised and amended as necessary.

We aim to develop lively, enquiring minds encouraging pupils to become self motivated, confident and capable in order to solve problems that will become an integral part of their future. 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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- Can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Implementation

At William Lilley Infant and Nursery school, we use a teaching for mastery approach. Maths teaching for mastery supports the idea that everyone can do maths. All pupils are encouraged by the belief that by working hard at maths they can succeed.

Principles of a Maths Mastery Approach To establish:

- Coherence Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.
- Representation and Structure Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.
- Mathematical Thinking If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.
- Fluency Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.
- Variation This is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical.

We teach mathematics in EYFS through a balance of taught, teacher directed and child initiated learning. Mathematics is carefully planned to ensure opportunities within play, routines and these intentional teaching to support children's progress and mathematical development. In KS1, children are taught through discretely organised Year 1/Year 2 lessons. Mathematics learning is playful and children in Year 1 also have access to open ended directed learning in mathematics through the use of target challenges within the 'Nest' area.

Planning

Long term planning

The National Curriculum for Mathematics 2014, Birth to 5 Matters 2021 and the Early Learning Goals (Number, Numerical Patterns) provide the long-term planning for mathematics taught in the school.

Medium term planning

Teachers support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum. Additionally, NCETM Mastering Number programmes are taught in some year groups to support children with fluency in calculation and a confidence and flexibility with number. Target maths sessions are planned as follows:

- Nursery planning breakdown (*Appendix 1*)
- Reception breakdown (*Appendix 2*)
- In Key Stage 1, maths lessons follow the NCETM prioritisation materials. This ensures progression across all areas of maths and a mastery approach. Lessons can be adapted from the NCETM prioritisation materials. Staff can use the Oak Academy lesson plans which are based directly on the NCETM prioritisation materials. Staff have also been provided with access to the White Rose website and materials. Careful consideration has been given for the transition from Reception and from Year 1 to Year 2. (*Appendix 3*).

Short term planning

Lessons are planned using a WALT (What am I learning today) which sets out the key learning in the lesson. The WILF (What I am looking for) is shared with the class during the lesson so that children can assess whether they have been successful.

Staff produce a PowerPoint document each week which highlights the objectives, scaffolds the learning and links to the curriculum scaffolds and vocabulary, this should be saved onto the SharePoint for all staff to access and for monitoring purposes.

Nursery can use their own planning documents but must show 2 to 3 taught maths inputs each week in addition to directed and child initiated learning. Reception present their learning through a PowerPoint each week. Learning in EYFS is carefully planned to ensure opportunities within play, routines and these intentional teaching to support children's progress and mathematical development.

Key Stage One have a minimum of nine directly taught sessions over a two week period alongside any directed play based learning opportunities.

Concrete / Pictorial / Abstract Approach

The CPA approach, concrete, pictorial, abstract, is a powerful teaching method that helps children build deep, lasting understanding in maths. Rooted in Bruner's work on cognitive development, CPA guides pupils from hands-on experiences to visual representations, and finally to abstract symbols.

Now central to the teaching for mastery approach, CPA ensures that children don't just memorise procedures but truly understand the maths behind them. Each of our series of lessons has reference to Concrete, Pictorial and abstract understanding.

Concrete representation

The children are first introduced to an idea or a skill by acting it out with real objects. In division, for example, this might be done by separating apples into groups of red ones and green ones or by sharing 12 biscuits amongst 6 children. This is a 'hands on' approach using real objects and it is the basis for conceptual understanding. Concrete apparatus such as Numicon, double sided counters, base 10 apparatus and place value counters are used widely across school.

Pictorial representation

This is used when a child has sufficiently understood the hands-on experiences performed and can now relate them to representations, such as a diagram or picture of the problem. In the case of division this could be the action of circling objects.

Abstract representation

The symbolic stage – a student is now capable of representing problems by using mathematical notation, for example: $12 \div 6 = 2$. This is clearly the more confusing and mysterious of the three and without the 'hands on' and pictorial steps can be tricky for children to understand.

Home Learning

Children are set home learning tasks which consolidate skills taught in school. This is represented within the weekly 'homework' activities in Reception, Year 1 and Year 2. See the Homework policy for further details.

Recording, Marking and Feedback

Verbal feedback is a priority and is provided to children continuously throughout the lesson. Children progress throughout the school and are given increasing opportunities to edit their responses in light of feedback. Staff may provide additional support to further scaffolds and modelling.

Evidence of work is presented through a colour-coded system.

Work presented with a red border shows children **working below** expected standard for their age and stage.

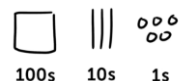
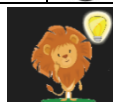
Work presented with a amber border shows children **at** the expected standard for their age and stage.

Work presented with a green border shows children **above** the expected standard for their age and stage.

Work presented in a blue border are open ended extended challenges for children to apply deep mathematical thinking above the expected standard.

We focus on practical opportunities which scaffold learning to develop mathematical thinking through the Mastery approach. Any evidence of directed, taught sessions within Nursery and Reception should be recorded in floorbooks which includes the learning objectives for the week and colour coded borders.

Year 1 children should complete one recorded piece each week in Autumn term 1 quickly increasing to 3 pieces of independent work recorded each week. Year 2 should produce recorded work between 3 and 5 times a week. Children's work must include a WALT strip with the learning objective and success criteria (see below). Independent work will be filed in a blue folder in KS1.

	WB.	WALT: Use knowledge of teen numbers			
		• Answer subtraction equations. • Find missing numbers in subtraction equations. • Identify odd and even numbers up to 20.			
Concrete		Pictorial	 100s 10s 1s	Abstract	

Inclusion

SEND

Pupils identified on the SEND register are assessed against National Curriculum Age related expectations in the year group in which they are in or from an earlier year group. They are supported within their Maths lessons in a variety of ways for example through specific tasks, support from teachers and teaching assistants and practical concrete apparatus. Pupils on the SEND register for Mathematics will be supported with a provision map or Individual Education Plan.

EAL

We recognise at William Lilley that children with EAL may impact mathematics primarily by creating language barriers in word problems and academic vocabulary, even though core numerical and symbolic skills often remain strong. Consideration is given with pupils with EAL, by providing opportunities to learn key words and phrases, model the language and allow opportunities to practice target language.

Additional vulnerable groups

Each year, we review the needs of the cohort and provide support for any groups of children who may be demonstrating a similar need. This may be through Mathematical organisation, support or small group intervention.

Assessment

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of pupils daily through:

- regular marking of work

- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term is planning evaluated in light of these assessments. Summative assessments are carried out across school every term using National test style assessment materials. These scores, alongside judgements made from class work support the teacher to assess whether a child is meeting age related expectations.

In EYFS, children are assessed weekly against the half termly assessment criteria which lead to the final end of Foundation stage assessment against the Early Learning goals criteria for different aspect of Mathematics.

Maths displays and resources

Children have Mathematics working walls alongside Mathematics working areas for access in child initiated play. Maths working walls act as dynamic, evolving learning tools rather than static displays. They visually scaffold current concepts, reduce cognitive load by recording ongoing steps to success, and support independent problem-solving through concrete, pictorial, and abstract representation. The working areas support children to consolidate skills, take risks, practice and explore. In addition to working walls and working areas (in EYFS and the nest), children will have access to concrete materials during all maths lessons.

To ensure consistency throughout the school and to ensure children are given every opportunity to meet Age Related Expectations each classroom at William Lilley, each classroom will have the following displayed.

	EYFS	Year 1	Year 2
Display	• Number lines • Strategies for calculation examples (teacher and children) • Examples of resources being used effectively	• Number lines up on walls • 100 square • number words • Operation signs and related vocabulary • Strategies for calculation examples (teacher and children) • Number bonds • Doubles and halves	• Number lines up on walls • 100 square • number words • Operation signs and related vocabulary • Strategies for calculation examples (teacher and children) • Number bonds • Doubles and halves • Times tables charts
Manipulatives available each lesson	• Wide range of different resources built up over time within Maths areas – to be accessed independently.	• Cubes • Two sided counters • Number line to 20	• Part part whole diagrams laminated – children should know how to use these to show missing number calculations.

		• Part-part whole diagrams laminated • Lower ability to have access to numicon (During summer term swap cubes for dienes (tens and ones), and swap number lines for hundred squares.)	• Hundred squares • Dienes
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= Once taught then stay up for reference

= During the operation topic not to be up constantly needs to be a working wall and relevant to the topic

Use of calculation strategies and manipulatives

Manipulatives and representations can be powerful tools for supporting young children to engage with mathematical ideas and understand a specific mathematical concept. Teachers will provide lessons which will provide opportunities to apply these strategies. The examples given are not exhaustive and our children should be exposed to a range.

The strategies are set out in a progressive order with each strategy broken down into Concrete, Pictorial and Abstract (CPA): this will develop children's deep understanding and mastery of each mathematical concept. CPA should not be used as a way to differentiate lessons, rather the whole class should be taught progressively through concrete to pictorial. Children use concrete objects to help them make sense of the concept or problem; this could be anything from real object to mathematical counting equipment. This is then developed through the use of images, models and children's own pictorial representations before moving on to the abstract mathematics. Children may often revisit previous stages when a concept is extended or revised. Children should still have access to concrete and pictorial representations when working at an abstract level.

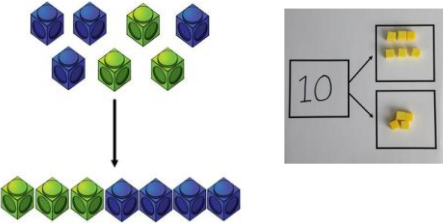
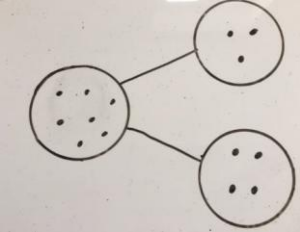
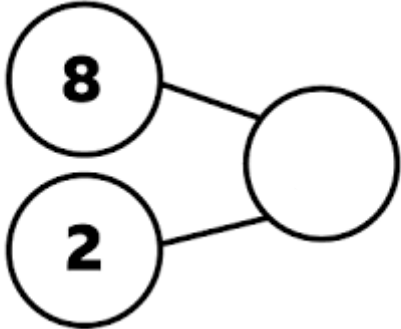
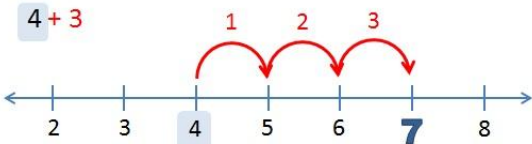
Each progressive step through the strategies should be seen as a new tool the child can use to solve problems in different contexts. The aim is that the children will leave William Lilley with a number of tools. Each step does not necessarily supersede the last. As children become more confident and independent they will choose which strategy is most efficient.

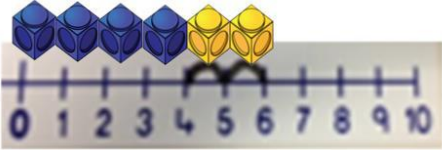
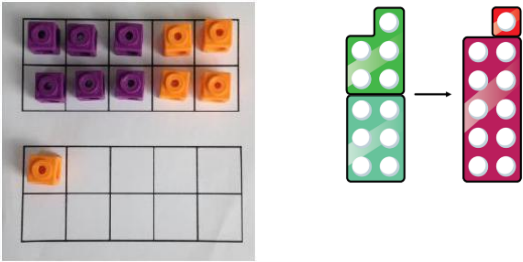
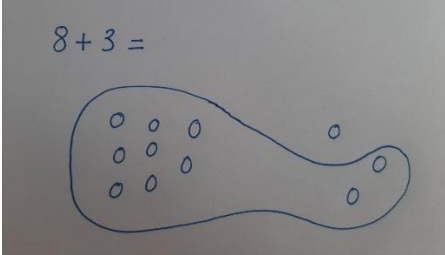
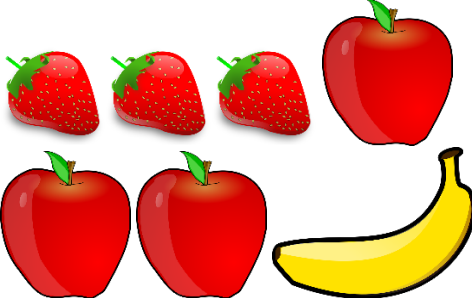
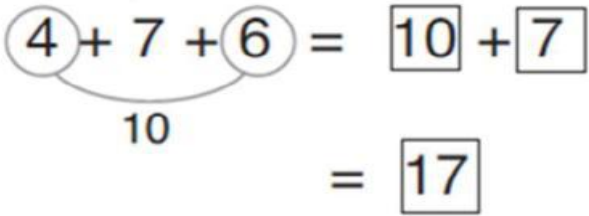
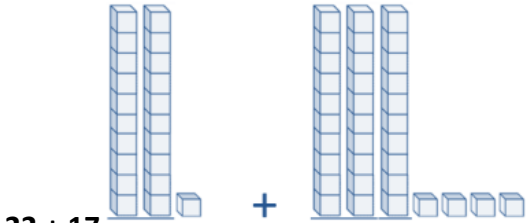
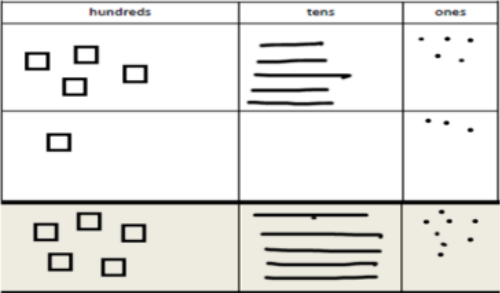
The strategies are separated into the 4 operations. However, it is intended that addition and subtraction, and multiplication and division will be taught together to ensure that children are making connections and seeing relationships in their mathematics. Some strategies will be taught simultaneously, for example, counting on (addition) and counting back (subtraction) in EYFS.

Teachers need to be mindful of the age-related expectations as listed below, these are taken from the EYFS and the National Curriculum. Children must be supported through this CPA approach to ensure a depth of understanding of the strategies rather than surface procedural knowledge. These calculations must be taught along side lessons in number, place value and reasoning to ensure a keen number sense and fluency.

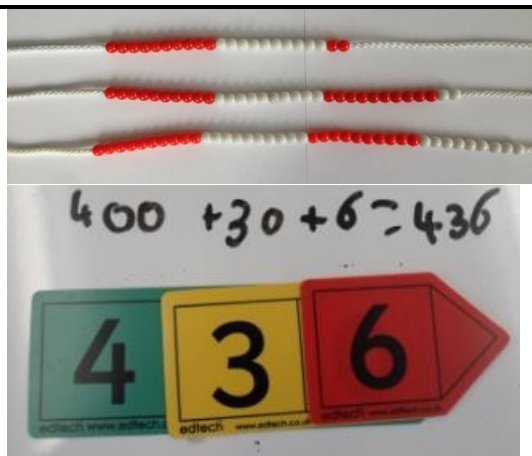
Nursery	Reception	Year 1	Year 2
• Separating a group of three or four objects in different ways, beginning to recognise that the total is still the same. • Comparing two groups of objects, saying when they have the same number.	• Automatically recall number bonds up to five, including subtraction facts, and some number bonds to 10, including doubles facts. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	• Given a number, identify 1 more or 1 less. • Count in multiples of 2s, 5s and 10s. Count to and across 100, forward and backward, beginning with 0 or 1, or from any given number. • Read, write and interpret mathematical statements involving + -= signs. • Represent and use number bonds and related subtraction facts within 20. • Add and subtract 1-digit and 2-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \Delta - 9$. • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. • Identify, represent and estimate numbers using different representations, including the number line. • Use place value and number facts to solve problems. • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers. • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals (=) signs. • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Addition

Strategies	Concrete	Pictorial	Abstract
Combining two parts to make a whole	Use a variety of different counting equipment.  The image shows a group of 8 cubes (4 blue, 4 green) being combined into a single row of 10 cubes (5 blue, 5 green). To the right, a ten-frame is shown with 10 yellow cubes, illustrating the total of 10.	Children to represent the counting equipment using dots or crosses.  The image shows two circles, each containing 5 dots, representing the two parts being added. Children use pictures of two parts.  The image shows 3 apples and 2 bananas, representing the two parts being added. $3 + 2 = 5$	$8 + 2 = ?$ Eight is a part, two is a part, what is the whole?  The image shows a Venn diagram with two overlapping circles. The left circle is labeled '8' and the right circle is labeled '2'. The overlapping area is empty, representing the unknown sum. I have 4 apples and I pick 3 more, how many have I got altogether?
Counting on Children should be taught to count on starting from the largest number	Counting on using counting equipment or fingers.  The image shows a string of beads with 4 red beads and 3 yellow beads, representing the two parts being added.  The image shows two hands with fingers spread, representing the two parts being added.	Counting on using a number line.  The image shows a number line from 2 to 8. A blue box highlights the number 4, and a red box highlights the number 7. Red arrows show the process of counting on: from 4 to 5 (1), from 5 to 6 (2), and from 6 to 7 (3).	Reinforce starting from the largest number. $4 + 7 = 11$ Using known number facts to encourage fluency. $9 + 1 = 10$

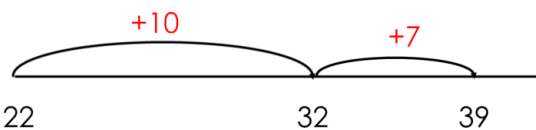
			
Regrouping to make 10 Children use their number bond knowledge to bridge to 10 rather than counting on.	6 + 5 using ten frames and counters/cubes or using Numicon 	Children to draw own 10s frames and representations. 	Children to develop an understanding of equality e.g. $6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$ Solving problems involving bridging eg. I have 6, how much more do I need to make 10? If you know $7 + 3 = 10$, what else do you know?
Adding 3 single digits Children to develop fluent recall when adding single digit numbers, using known number facts such as doubles and number bonds to 10.	Use bead strings, counters and counting equipment. 	 $3 + 3 + 1 = 7$ Using pictures of objects, number lines etc.	 $6 + 3 + 4 =$ $6 + 4 + 3 = 10 + 3$ $10 + 3 = 13$
Partitioning to add Children need to develop a deep understanding of place value. Recording addition and subtraction in columns helps to prepare children	$21 + 34 =$ 	Children to represent the base 10 e.g. lines for tens and dot/crosses for ones. 	Progressing towards written methods of column addition.

for KS2 written methods.



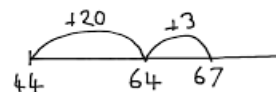
Addition on a number line using partitioning

e.g. $22 + 17 =$

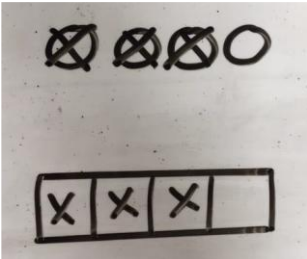
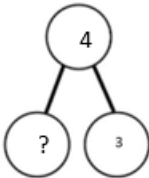
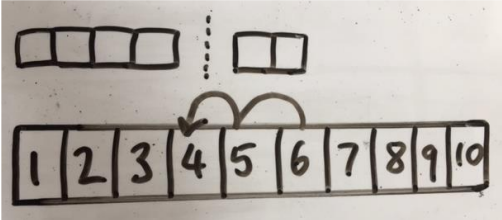
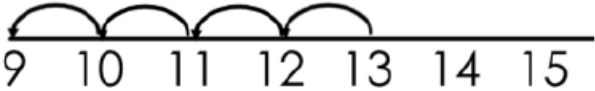


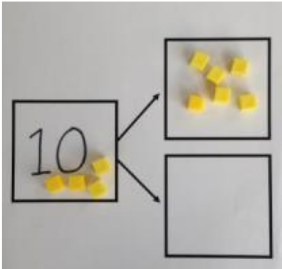
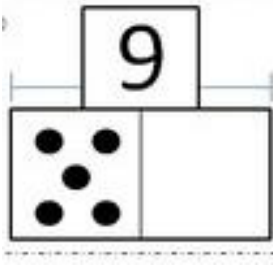
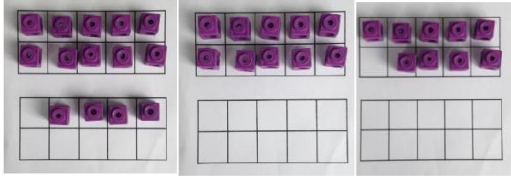
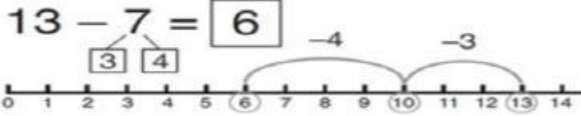
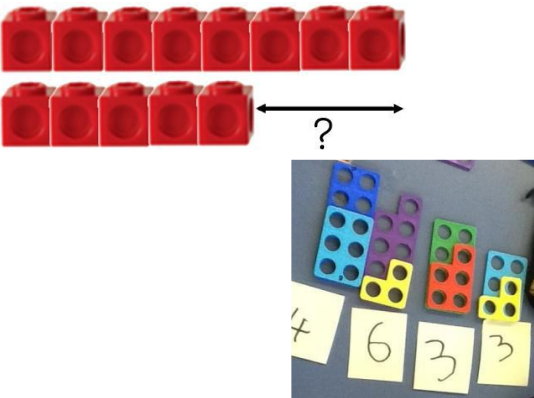
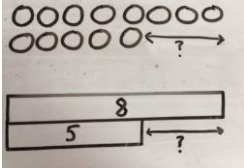
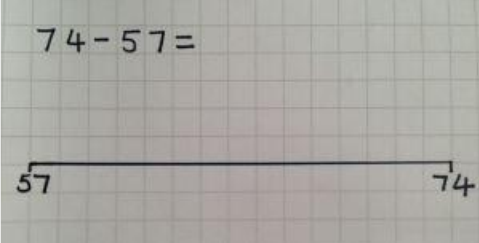
Start by counting on jumps of ten and extend to jumps of multiples of 10 as children become more confident.

$$\begin{array}{r} 44 + 23 = 67 \\ \quad \swarrow \searrow \\ \quad 20 \quad 3 \end{array}$$



Subtraction

Strategies	Concrete	Pictorial	Abstract
Taking away ones	Physically taking away objects or covering up sections of a numicon shape.  	Moving on to crossing out drawn representations or developed further into crossing out drawn representations of tens and ones. e.g. $4 - 1$ 	$7 - 2 =$ There are 14 birds and 3 fly away. How many are left? 
Counting back This should only be used for counting back a small number.	Counters, cubes or other counting equipment should be physically moved whilst counting backwards. 	Children to draw what they see $6 - 2 = 4$  Use number lines to support counting back. $13 - 4 = 9$ 	Put 19 in your head and count back 3. What number did you get to? Use your fingers to help.

Part Part Whole Model This model helps children to understand the inverse relationship between addition and subtraction.	Using counting equipment children can physically split the whole into two groups to answer missing number problems. e.g. $10 - 6 =$ 	Children need to see a variety of different problems and orientations of the model. 	I had 8p in my purse and I spent 5p. How much do I have left? $? = 8 - 5$
Make 10 Children are taught to take away a single digit from a two digit number. Children will identify how to get to the next 10.	$14 - 5 = 9$ Make 14 on ten frames take away 4 to make 10 then take away the extra 1. 	$13 - 7 = 6$  Children need to understand that 7 is composed of 3 and 4. They can then be more fluent when taking away 3 to get to 10 before taking away the 4.	$14 - 6 =$ How many do we subtract to get to the next 10? How many more do we need to subtract?
Find the difference Children should develop a good understanding of difference. They need to understand addition is the inverse of subtraction and to be able to count on or count back.	Use Numicon, cubes or other counting equipment to find the difference between two pieces, groups or towers of cubes. 	Children draw what they have seen/created with cubes.  Use a blank number line to count on and find the difference. 	Investigate why $8-5$, $7-4$, $6-3$ all have the same difference. Sam has 8p less than Mo. Mo has 15p. How much money does Sam have?

Partitioning to subtract

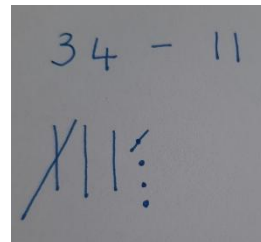
This method is dependent on a strong understanding of number.

Taking away using numicon or dienes by taking away the 10s and the 1s.

$$42 - 21 =$$

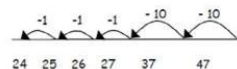


Drawing sticks of ten and ones and crossing them off.



Taking away using a number line by partitioning the second number into 10s and 1s. Firstly taking away 10 at a time and progressing to taking away multiples of 10 in one jump.

$47 - 23 = 24$ Partition the second number and subtract it in tens and units, as below:



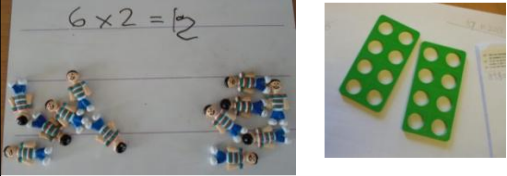
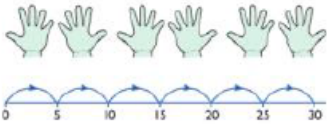
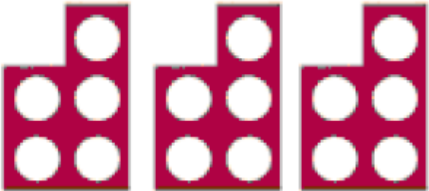
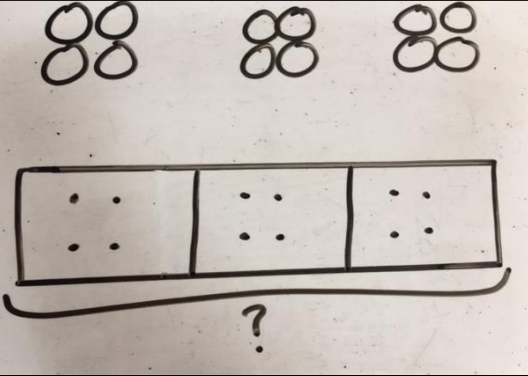
Move towards more efficient jumps block, as below:

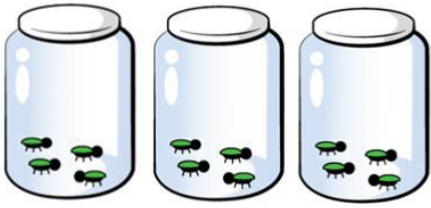
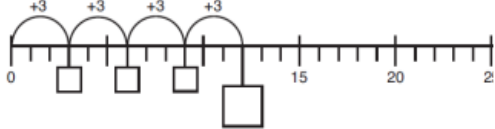
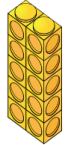
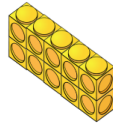
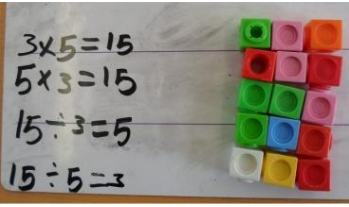
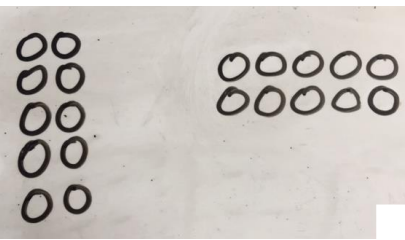
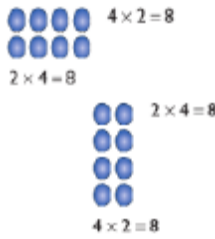


Answer subtraction number sentences and word problems.

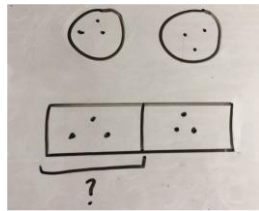
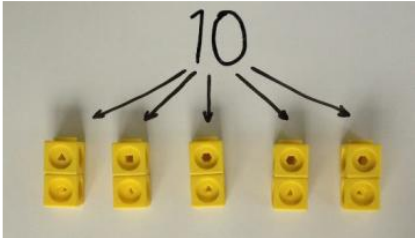
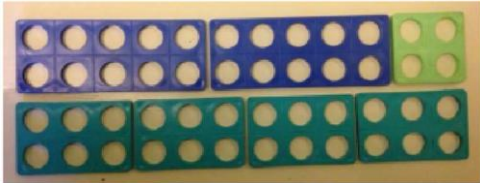
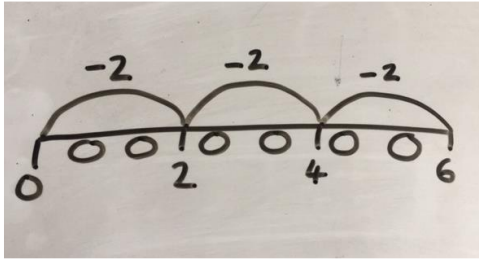
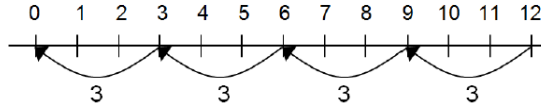
Bob had 42 marbles. He lost 11. How many does he have left?

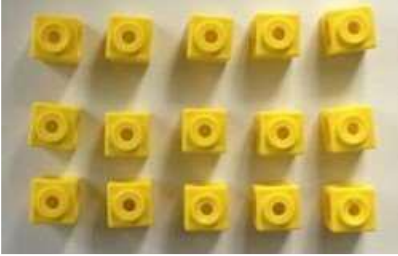
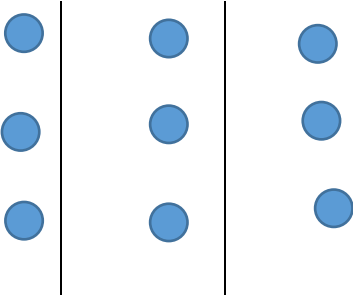
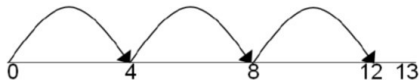
Multiplication

Strategies	Concrete	Pictorial	Abstract
Doubling Children need to develop fluent mental recall of doubles facts.	Physically doubling sets of counting equipment, numicon etc  Using dominos and butterflies as representations of doubles. 	Drawing own representations of doubles. Eg double 3 	Written multiplication questions e.g. $3 \times 2 =$ There are 6 bikes. How many wheels are there?
Counting in multiples Children can then use their fingers to skip count in multiples. They will become increasingly fluent.	Counting in multiples  	Children to count diagrams or count on a number line. 	Count aloud in multiples. Work out missing numbers in number sequences. e.g. 5, 10, 15, ?, 25 If I am counting in 5s will I say 17? Why not?
Repeated Addition Children can use their skip counting to find the totals of repeated additions.	Using counting equipment children can skip count. 		Children write repeated addition and the corresponding multiplication number sentences. These should be written to describe concrete objects to begin with. Eg. Blocks in groups of 4, $4 + 4 + 4 =$ $3 \times 4 =$

		Children record using diagrams or a bar model. Children should be developing an understanding of the link between repeated addition and multiplication. 	
Arrays Children should be taught that an array can represent different number sentences. Arrays demonstrate both the commutative nature of multiplication and that division is the inverse of multiplication.	 2 lots of 5  5 lots of 2   $3 \times 5 = 15$ $5 \times 3 = 15$ $15 \div 3 = 5$ $15 \div 5 = 3$	Children can draw their own arrays or write number sentences for a given array.  	Children should be able to write corresponding multiplication and division number sentences. $3 \times 5 = 15$ $5 \times 3 = 15$ $15 \div 3 = 5$ $15 \div 5 = 3$ There are 4 pencil pots. Each pot contains 3 pencils. How many are there altogether? A car has 4 wheels. There are 16 wheels. How many cars are there?

Division

Strategies	Concrete	Pictorial	Abstract
Division as Sharing Children learn to divide objects equally.	Starting with dividing pencils into pots, cubes into bowls etc. 	Children can write the division number sentence to match a given picture.  Children can draw representations of sharing 	Share 10 sweets between 5 people. How many do they get each? $8 \div 4 = 2$
Division as Grouping Division is shown as equal groups. This reinforces the idea of division as the inverse of multiplication. This leads to division as repeated subtraction.	Use cubes, counters, numicon to show numbers divided into equal groups. 10 in groups of 2.  24 divides into groups of 6  How many towers of 3 can I make with 12 cubes?	Start by drawing representations of practical activities. Moving on to taking away on a given number line. Children can then move on to repeated subtraction on their own number line.  	How many groups of 5 in 20?

Division as Arrays	 Link division to multiplication by creating arrays and the corresponding multiplication and division number sentences.	Draw an array and use lines to separate the array into groups to create multiplication and division number sentences. 	If $5 \times 4 = 20$ what else do you know?
Division with remainders (Greater depth Yr2)	Divide objects into groups and see what is left over.   $14 \div 3 = 4 \text{ remainder } 2$	Draw dots and group them to divide an amount and show the remainder. $14 \div 4 =$  Use a number line to divide and show a remainder. $13 \div 4 =$ 	Answer division number sentences recording remainders. $22 \div 5 = 4 \text{ remainder } 2$

Appendix 1 - Nursery

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number	- Recite some number names in sequence. - Knows that the last number said is the total. - Knows that numbers identify how many objects are in a set. - Selects a small number of objects from a group when asked (up to 3). - Reacts to changes in an amount up to 3 (N1)	- Knows that numbers identify how many objects are in a set. - Knows that the last number said is the total. - Selects a small number of objects from a group when asked (up to 3).	- Recites numbers to 10 in order. - Knows that a group of things change in quantity when something is added or taken away. - Recognises numerals of significance. - Beginning to represent numbers using fingers. - Realising that not only objects but anything can be counted. - Beginning to make comparisons between quantities.	- Recites numbers to 10 in order. - Recognises numerals of significance. - Knows that a group of things change in quantity when something is added or taken away. - Realising that not only objects but anything can be counted. - Beginning to make comparisons between quantities. - Creates and experiments with symbols and marks representing the idea of number.	- Sometimes matching quantities and numerals correctly. - Beginning to represent numbers using fingers, marks on paper or digits. - Separates a group of 3 or 4 in different ways beginning to recognise that the total is always the same. - Compare two sets of objects, saying when they have the same amount. - Representing numbers on 10s frames. - Matching Numicon to numerals and amounts. - Collect a small number of objects from a group when asked (N1)	- To begin to represent numbers using fingers, marks on paper or digits. - To be able to separate a group of 3 or 4 in different ways beginning to recognise that the total is always the same. - To be able to represent numbers on 10s frames. - To be able to match numicon to numerals and amounts.
Numerical patterns	- Uses some number names and mathematical language spontaneously. - Uses some informal language of quantities such as 'I've got more than you'. - Confidently attempts fitting shapes into spaces on inset boards or jigsaw puzzles. - Demonstrates an awareness and enjoyment of daily activities. - Talks about the routine of the day and using	- Recite some number names in sequence. - Organises blocks to create simple structures and arrangements. - Demonstrates some awareness of positional language with the help of gesture. - Beginning to use the language of size. - Beginning to talk about the shape of objects – round, tall, flat. - Talks about the routine of the day and using language such as 'before' and 'after'.	- Uses some number names accurately in play. - Shows curiosity about number by offering comments or asking questions. - Uses some language of quantities such as 'more' and 'a lot'. - Creates and experiments with symbols and marks representing the idea of number. - Uses positional language. - Shows an interest in shape by playing with shapes or making	- Uses some language of quantities such as 'more' and 'a lot'. - Shows curiosity about number by offering comments or asking questions. - Uses positional language. - Uses comparative language such as 'taller', 'shorter' and 'the same'. - Beginning to make comparisons between two groups (N1)	- Recognises numerals in the environment. - Sometimes counting accurately. - Starting to identify shapes in the environment. - Asks questions about their observations of similarities and differences. - Starting to make more meaningful pictures, patterns, and arrangements with shapes.	- To be able to compare two sets of objects, saying when they have the same amount. - To ometimes counting accurately. - To be able to start to find appropriate shapes for a task. - To be able to start to make more meaningful pictures, patterns, and arrangements with shapes. - To recognise numerals in the environment.

	language such as ‘before’ and ‘after’. • Organises blocks to create simple structures and arrangements. • Demonstrates some awareness of positional language with the help of gesture. • Beginning to use the language of size. • Beginning to talk about the shape of objects – round, tall, flat.	• <i>Demonstrate counting behaviours such as pointing or saying some number names (N1)</i>	arrangements with objects. • Shows awareness of similarities of shapes in the environment. • Uses comparative language such as ‘taller’, ‘shorter’ and ‘the same’.			
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Appendix 2 - Reception

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn Term	Getting to know you	Number Songs and Rhymes Zero	Counting One	Counting Two	Counting Three	Pattern Four	One More/ One Less Five	Addition Counting the total Six	Addition Counting the total Seven	Subtraction How many left? Eight	Subtraction How many left? Nine	2D Shapes Ten
Spring Term	Alive in 5! 1,2,3,4,5	Estimating	Data Handling	Numbers up to 20 and beyond! (teens)	Sorting and Classifying	Measuring Length and Height	Growing 6, 7, 8	Addition Counting on	Subtraction Counting back	Measuring Capacity	Building 9 and 10.	3D Shapes
Summer Term	Number bonds to 10	Odds and Evens	Doubling and halving	Time	Addition & Subtraction	Number Patterns & Repeating Patterns	Numbers up to 20 and beyond!	Sharing	Addition Problems	Subtraction Problems	Money	Measuring Weight

Appendix 3 – Key Stage 1

We follow the NCETM prioritisation materials for Year 1 and Year 2, an up-to-date breakdown of this can be seen within the following link: [Curriculum prioritisation in primary maths | NCETM](#)

	Year 1				Year 2			
Link	Year 1 curriculum map NCETM				Year 2 curriculum map NCETM			
Curriculum maps	Previous Reception experiences and counting within 100 Unit 1 – 7 weeks	Comparison of quantities and part-whole relationships Unit 2 – 3 weeks	Numbers 0 to 5 Unit 3 – 2 weeks	Recognise, compose, decompose and manipulate 2D and 3D shapes Unit 4 – 3 weeks	Numbers 10 to 100 Unit 1 – 4 weeks	Calculations within 20 Unit 2 – 3 weeks	Fluently add and subtract within 10 Unit 3 – 1 week	Addition and subtraction of two-digit numbers (1) Unit 4 – 2 weeks
	Numbers 0 to 10 Unit 5 – 3 weeks	Additive structures Unit 6 – 4 weeks	Addition and subtraction facts within 10 Unit 7 – 3 weeks	Numbers 0 to 20 Unit 8 – 4 weeks	Introduction to multiplication Unit 5 – 7 weeks	Introduction to division structures Unit 6 – 2 weeks	Shape Unit 7 – 2 weeks	Addition and subtraction of two-digit numbers (2) Unit 8 – 3 weeks
	Unitising and coin recognition Unit 9 – 5 weeks	Position and direction Unit 10 – 1 week	Time Unit 11 – 2 weeks		Money Unit 9 – 1 week	Fractions Unit 10 – 2 weeks	Time Unit 11 – 1 week	Position and direction Unit 12 – 1 week
Further details	Autumn term Previous Reception experiences and counting within 100. 3 weeks. Comparison of quantities and part- whole relationships. 3 weeks. Numbers 0 to 5. 2 weeks. Recognise, compose, decompose and manipulate 2D and 3D shapes. 3 weeks. Spring term Numbers 0 to 10. 3 weeks. Additive structures. 4 weeks. Addition and subtraction facts within 10. 3 weeks. Summer term Numbers 0 to 20. 3 weeks only. Unitising and coin recognition. 4 weeks only.				Start with unit 2 – calculations within 20. (Unit 1 covered at the end of Year 1)			

	Ensure coverage of counting in 2s, 5s and 10s. Position and direction. 1 week. Time. 1 week. This should be a two week block. Focus on clocks and telling time to o'clock and half past. Brief recap of language of time. Year 2 unit, numbers 10 to 100. 4 weeks.	
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