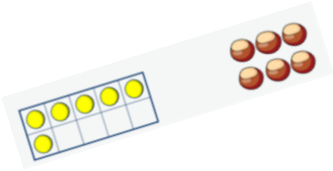
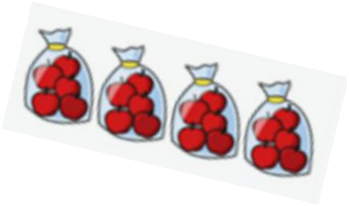
Number and Calculations

Teaching and Learning at Menston Primary School





Key Stage 1

Year 1 and Year 2

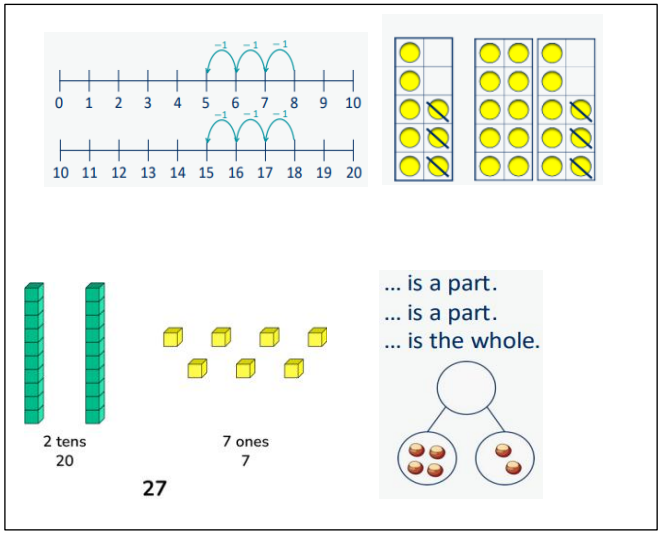
In Year 1 and Year 2, mathematics is taught through daily, carefully sequenced lessons that build secure understanding of the National Curriculum objectives. These lessons are complemented by Mastering Number sessions, which strengthen children's fluency and deepen their number sense. Using a mastery approach informed by NCETM guidance, teachers plan from National Curriculum objectives and draw on the White Rose Maths scheme of learning to ensure thorough and coherent coverage of all required content.

The Mastering Number programme provides consistent, high-quality experiences with number, enabling children from Reception to Year 2 to develop strong mental strategies, flexibility with number and confidence in their early calculation skills. Our aim is that all children leave Key Stage 1 with secure fluency in calculation and a deep, adaptable understanding of number that prepares them well for the demands of Key Stage 2 mathematics.

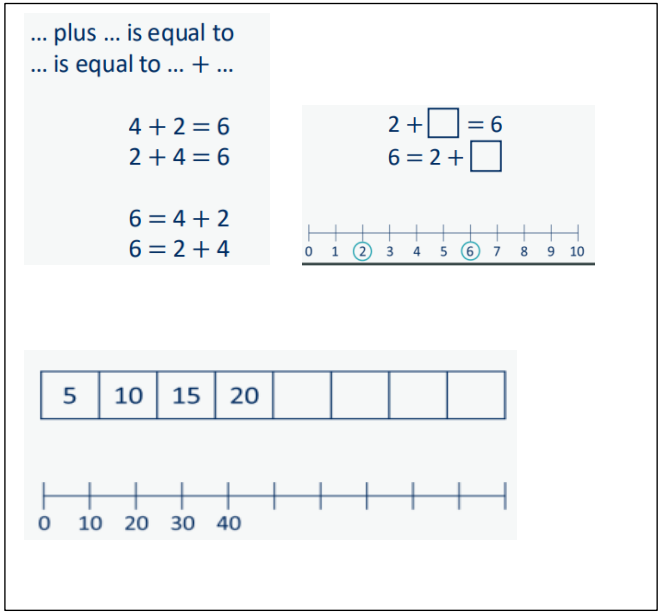
We use a range of sources when planning maths lessons, ensuring that learning is carefully sequenced so children progress from **concrete resources** to **pictorial representations** and then to **abstract concepts** as they are ready.

Concrete:
In Key Stage 1, children continue to use practical, hands-on resources to support and deepen their mathematical understanding. Manipulatives such as counters, cubes, bead strings, number lines, dienes (base 10), tens frames and other familiar classroom materials help children represent quantities, model calculations and make sense of new concepts. These concrete resources enable children to visualise number relationships, check their reasoning, and explore patterns in a meaningful way. Although pupils increasingly move towards pictorial and abstract representations throughout Year 1 and Year 2, concrete materials remain an essential part of teaching and learning, supporting children to secure and apply their understanding with confidence.

Pictorial:
As children move through Key Stage 1, they continue to develop their ability to represent mathematical thinking using a range of pictorial models. These may include drawings, number lines, tens frames, part–whole models, bar models, arrays, tally marks, or simple diagrams that mirror the structure of the concrete resources they have used. Pictorial representations help children bridge the gap between hands-on experiences and abstract notation, supporting them to visualise number relationships and explain their reasoning with increasing clarity. Throughout Year 1 and Year 2, pupils use these visual models to rehearse strategies, deepen their understanding of key concepts and communicate their mathematical ideas more independently.



Abstract:
As children become secure with both concrete and pictorial representations, they increasingly work with abstract mathematical concepts, using numerals, symbols, and written methods with growing confidence. In Key Stage 1, this includes reading and writing numbers, recording calculations using symbols such as **+**, **–**, **=** and beginning to understand the structure of simple equations. Children apply mental strategies, recognise number patterns, and use abstract notation to solve problems and explain their reasoning. Abstract understanding is introduced gradually and purposefully, ensuring children can make clear links back to the concrete and pictorial models that underpin their learning. This careful progression supports pupils in developing fluency, accuracy, and confidence as they move towards more formal written methods in Key Stage 2.



Concrete Resources for maths teaching in Year 1 and Year 2

Concrete Resource		What it can be used for	How the resource is used
Double-sided counters		conservation of number; counting; sorting; patterns	Using counters, children explore part–part–whole relationships by dropping a small set, identifying how many of each colour they have, and recognising the total. They then rearrange the counters to make the parts easy to subitise before recording the related addition and subtraction equations. This helps them see that if the whole is 6 and the parts are 4 and 2, they can represent this in multiple ways (e.g., 4 + 2 = 6, 6 = 4 + 2, 6 – 4 = 2).
Rekenreks		bonds of ten & twenty; addition & subtraction of amounts up to 20; subitising	Children subitise amounts by placing a finger on the number and sliding across, rather than counting in ones. The top and bottom rows together support learning doubles, a single row supports bonds of ten, and both rows combined support bonds of twenty.
Unifix cubes		towers; groups; patterns; comparison; counting; making Numberblock characters	Use paired cube towers to model doubles by building two towers of equal height and counting in twos as children touch matching cubes simultaneously. To model near doubles, increase one tower by one to show, for example, that 6 + 7 is double 6 and one more. Cube towers can also be used to find the difference by comparing their heights: first identify the extra part needed to make them equal, then rotate the model horizontally to represent a bar model showing the missing part. Bar models built in this way are then used to demonstrate the inverse relationship between addition and subtraction.
Multilinking cubes		odds and evens; 3D shapes (cubes and cuboids)	Use paired cubes to model even and odd numbers by arranging the cubes in twos to create patterns similar to Numicon tiles. When counting in twos, numbers with no cubes left over are identified as even (multiples of two), while numbers with one cube left over are identified as odd. Cubes should also be used to explore and build three-dimensional shapes, modelling how construction occurs in three directions, reinforcing the concept of 3D structure.

Dice		dotty dice (up to six spots); blank dice for teachers to make own images; ten faced dice with 0-9 – (games)	Use dice regularly to rehearse number facts, with a focus on subitising the dot patterns. When rolling more than one die, children can explore doubles, near doubles, 'one more' facts, and number bonds such as bonds of ten. Model placing the dice so that they touch once rolled, as this helps children subitise the total more easily and create number sentences based on the patterns they see.
Peg boards and pegs		arrays and patterns.	Use peg boards to create repeating colour patterns (e.g., AB, ABB) to develop children's understanding of sequences and early multiplicative thinking. Pegs are also used to form arrays to support counting in twos, fives, tens and threes, reinforcing early number patterns and repeated addition.
Items to bundle into tens i.e. lolly sticks and straws (and elastic bands and/or pipe cleaners)		preparation for understanding how base ten works.	Use individual items to count forwards in ones, bundling them into groups of ten each time a full ten is reached to develop understanding of place value. Count back in ones using the bundles, unbundling a ten when crossing a tens boundary to reinforce that one ten becomes ten ones. Use bundles regularly to rehearse one more/less across boundaries and to explore more/less than any number by adding or removing bundles of ten and naming the new number each time. Once pupils are confident with ones and tens separately, combine both concepts in regular tasks to secure understanding of the structure of two-digit numbers.
Real coins		Place value, coin value, multiplication, counting in steps of, division	Use 1p coins as counters to build amounts and represent values concretely. Once children are secure with unitising (understanding that one object can represent a value greater than one), use 2p coins to count in twos and 5p coins to count in fives. Use 10p and 1p coins together as place-value representations, rehearsing ten more/less and one more/less for any two-digit number. These activities support early understanding of value, efficient counting in multiples, and the structure of the number system.

Base Ten equipment (dienes) (Year 2)		tens and ones (and some hundreds)	Use Base Ten equipment to develop understanding that ten ones are equivalent to one ten and to build and represent two-digit numbers. Base Ten can then be used for adding and subtracting amounts alongside bundles and coins. Children should measure with the equipment (ones cubes as 1 cm, tens sticks as 10 cm) to reinforce the link between number and length. Use Base Ten within and without place-value grids. When finding the difference between two two-digit numbers, line up the Base Ten pieces to compare their lengths (e.g., 23 cm and 19 cm), allowing children to see the difference visually and concretely.
Hundred Bead Strings (Year 2)		counting; grouping; complements of 100	Use the 100-bead string to count in groups of ten by sliding a full group of ten beads at a time, reinforcing that each bead represents one and each alternating colour block contains ten. Use the bead string to investigate whether numbers such as 100 are multiples of 2 or 3 by sliding beads in groups of the chosen size. Provide small pegs where needed to help children keep groups visually separate. Use the 100-bead string to explore number pairs that total 100 by partitioning the string into two parts, recording equations such as 100 = 34 + 66. Support children to notice the emerging pattern that the tens digits sum to 90 and the ones digits sum to 10.

At Menston Primary School, we complement daily mathematics lessons with additional number fluency lessons from the **Mastering Number programme**. The aim of the Mastering Number programme in Years 1 and 2 is to secure firm foundations in number sense so that all pupils develop fluency in calculation and confidence and flexibility with number. Through short daily sessions, children build deep understanding of key number relationships, spot patterns and use appropriate manipulatives to strengthen their mental strategies, ensuring they leave KS1 with strong, reliable number foundations for future maths learning. Below is an overview of the Mastering Number programme for Y1 and Y2.

Mastering Number

Year 1 Overview

Term 1	Term 2	Term 3
Pupils will have an opportunity to consolidate the Early Learning Goals and continue to explore the composition of numbers within 10, and the position of these numbers in the linear number system. **Pupils will:** • subitise within 5, including when using a rekenrek, and re-cap the composition of 5 • develop their understanding of the numbers 6 to 9 using the '5 and a bit' structure • compare numbers within 10 and use precise mathematical language when doing so • re-cap the order of numbers within 10 and connect this to '1 more' and '1 less' than a given number	Pupils will continue to explore the composition of numbers within 10 and explore addition and subtraction structures and the related language (without the use of symbols). **Pupils will:** • explore the composition of each of the numbers 7 and 9 • explore the composition of odd and even numbers, seeing that even numbers can be made of two odd or two even parts, and that odd numbers can be composed of one odd part and one even part • identify the number that is two more or two less than a given odd or even number, identifying that two more/ less than an odd number is the next/ previous odd number, and two more/ less than an even number is the next/ previous even number	Pupils will explore the composition of numbers within 20 and their position in the linear number system. They will connect addition and subtraction expressions and equations to 'number stories'). **Pupils will:** • explore the composition of the numbers 11 to 19 as '10 and a bit' and compare numbers within 20 • connect the composition of the numbers 11 to 19 to their position in the linear number system, including identifying the midpoints of 5, 10 and 15 • compare numbers within 20 • understand how addition and subtraction equations can represent previously explored structures of addition and subtraction (aggregation/ partitioning/ augmentation/ reduction)
• explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2s) • explore the structure of the odd numbers as being composed of 2s and 1 more • explore the composition of each of the numbers 6, 8, and 10 • explore number tracks and number lines and identify the differences between them	• explore the aggregation and partitioning structures of addition and subtraction through systematically partitioning and re-combining numbers within 10 and connecting this to the part-part-whole diagram, including using the language of parts and wholes • explore the augmentation and reduction structures of addition and reduction using number stories, including introducing the 'first, then, now' language structure	• practise retrieving previously taught facts and reason about these

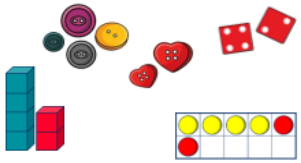
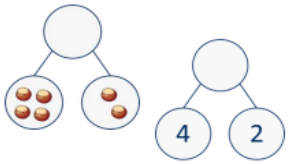
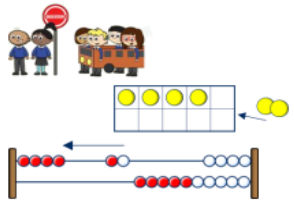
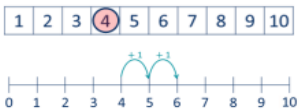
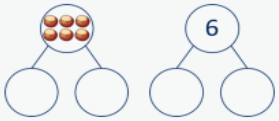
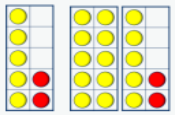
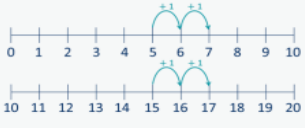
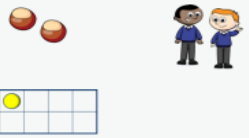
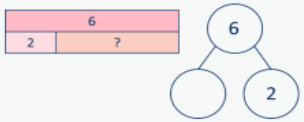
Mastering Number

Year 2 Overview

Term 1	Term 2	Term 3
Pupils will have an opportunity to consolidate their understanding and recall of number bonds within 10; they will re-cap the composition of the numbers 11 to 20 and reason about their position within the linear number system. **Pupils will:** • review the composition of the numbers 6 to 9 as '5 and a bit' • compare numbers using the language of comparison and use the symbols < > = • review the structure of even numbers (including exploring how even numbers can be composed of two odd parts or two even parts) and the composition of each of 6, 8 and 10 • review the structure of odd numbers (including exploring how odd numbers can be composed of one odd part and one even part) and the composition of each of 7 and 9	Pupils will have an opportunity to use their knowledge of the composition of numbers within 10 to calculate within 20; they will explore the links between the numbers in the linear number system within 10 to numbers within 100, focusing on multiples of 10 and the midpoint of 50. **Pupils will:** • explore how the numbers 6 to 9 can be doubled using the '5 and a bit' and '10 and a bit' structure • use doubles to calculate near doubles • use bonds of 10 to reason about bonds of 20, in which the given addend is greater than 10 • use known number bonds within 10 to calculate within 20, working within the 10-boundary	Pupils will have further opportunities to use their knowledge of the composition of numbers within 10 to calculate within 20 and to reason about equations and inequalities. **Pupils will:** • continue to explore a range of strategies to subtract across the 10-boundary • review bonds of 20 in which the given addend is greater than 10, and reason about bonds of 20, in which the given addend is less than 10 • practise previously explored strategies to support their reasoning about inequalities and equations • review doubles and near doubles and transform additions in which two addends are adjacent odd/ even numbers into doubles
• consolidate their understanding of the numbers 10 and 20 as '10 and a bit' • consolidate their understanding of the linear number system to 20 and reason about midpoints	• use their knowledge of bonds of 10 to find three addends that sum to 10 • use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary • use their understanding of the linear number system to 10 to position multiples of 10 on a 0–-100 number line and reason about midpoints	• consolidate previously taught facts and strategies through continued, varied practice

This overview of skills from the White Rose Maths calculation policy illustrates some of the progression steps that children take towards the end of **Year 1 calculations objectives** (addition, subtraction, multiplication and division).

Addition

Progression of skills	**Key representations** Concrete → pictorial → abstract		
Add together (aggregation) 2 quantities are combined to find the total.	There are … There are … There are … altogether. 	… is a part. … is a part. … is the whole. 	… plus … is equal to … … is equal to …. + … 4 + 2 = 6 2 + 4 = 6 6 = 4 + 2 6 = 2 + 4
Add more (augmentation) A quantity is increased.	First… Then… Now… 	I start at … I jump on … I land on … 	… plus … is equal to … is equal to … + … 4 + 2 = 6 2 + 4 = 6 6 = 4 + 2 6 = 2 + 4
Bonds within 10 Include bonds for each number within 10 Encourage children to notice patterns.	… is made of … and … … and … make … 	… can be partitioned into … and … 	… plus … is equal to … 6 + 0 = 6 5 + 1 = 6 4 + 2 = 6 3 + 3 = 6 2 + 4 = 6 1 + 5 = 6 0 + 6 = 6
Related facts within 20 Make links to known facts.	I know that … and … = … so … and … = … 	… more than … is … so … more than … is … 	What patterns do you notice? 5 + 2 = 7 15 + 2 = 17 7 = 5 + 2 17 = 15 + 2
Missing numbers Make links to known facts.	How many more do you need to make …? 	If … is the whole and … is a part, the other part must be… 	… plus … is equal to … 2 + □ = 6 6 = 2 + □ 

Y1 objectives for number and place value

*count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number

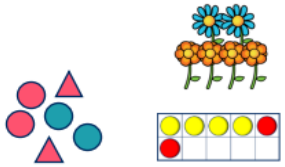
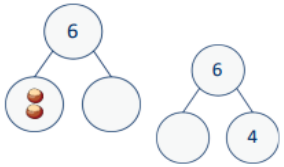
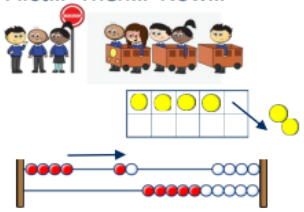
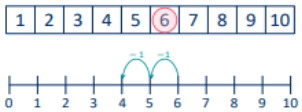
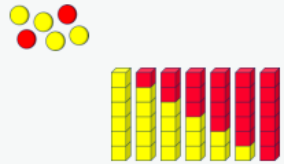
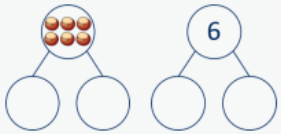
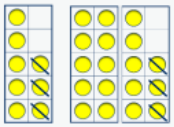
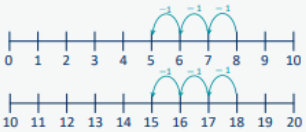
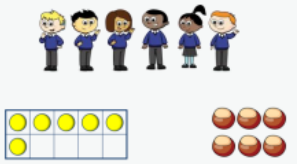
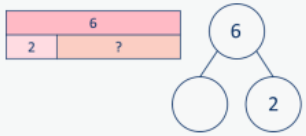
*count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s

*given a number, identify 1 more and 1 less

*identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

*read and write numbers from 1 to 20 in numerals and words

Subtraction

Progression of skills	Key representations	Concrete → pictorial → abstract	
Find a part Link to number bonds and known facts. E.g. 2 + 4 = 6 so if 6 is the whole and 4 is a part, the other part must be 2	There are … in total. … are … How many are **not** …? 	… is the whole. … is a part. … is a part. 	… subtract … is equal to … … is equal to … − … 6 − 2 = 4 6 − 4 = 2 4 = 6 − 2 2 = 6 − 4
Take away A quantity is decreased.	First… Then… Now… 	I start at … I jump back … I land on … 	… minus … is equal to … … is equal to … − … 6 − 2 = 4 6 − 4 = 2 4 = 6 − 2 2 = 6 − 4
Bonds within 10 Focus on subtraction facts. Encourage children to notice patterns.	… is made of … and … … and … make … 	… can be partitioned into … and … 	… minus … is equal to … 6 − 0 = 6 6 − 1 = 5 6 − 2 = 4 6 − 3 = 3 6 − 4 = 2 6 − 5 = 1 6 − 6 = 0
Related facts within 20 Make links to known facts.	I know that … minus … = … so … minus … = … 	… less than … is … so … less than … is … 	What patterns do you notice? 8 − 3 = 5 18 − 3 = 15 5 = 8 − 3 15 = 18 − 3
Missing numbers Make links to known facts.	How many do you need to subtract to make …? 	If … is the whole and … is a part, the other part must be… 	… minus … is equal to … 6 − □ = 2 2 = 6 − □ 

Y1 objectives for addition and subtraction

*read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs

*represent and use number bonds and related subtraction facts within 20

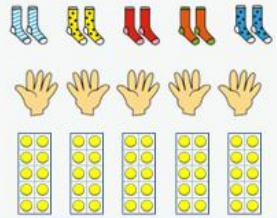
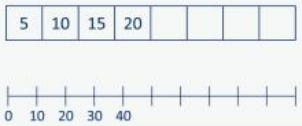
*add and subtract one-digit and two-digit numbers to 20, including 0

*solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as

5 + ? = 8

7 = ? − 9

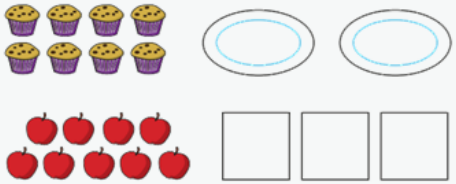
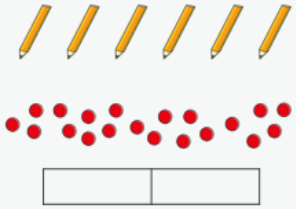
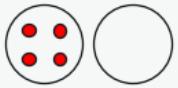
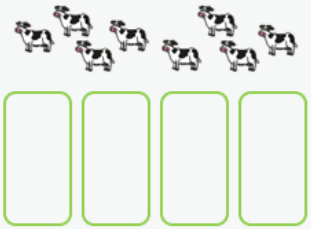
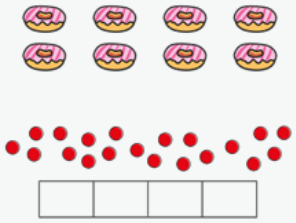
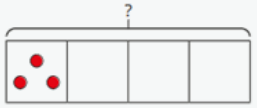
Multiplication

Progression of skills	Key representations Concrete → pictorial → abstract		
Count in 2s, 5s and 10s Begin by counting objects that naturally come in 2s, 5s and 10s, for example pairs of socks or fingers.	There are … equal groups of … There are … altogether. 	Continue to colour in …s What do you notice?  	Complete the number track/number line by counting in …s. 
Add equal groups (repeated addition) Children should be able to write a repeated addition to represent equal groups and to draw pictures or use objects to represent a repeated addition.	There are … groups of … There are … altogether.  10 + 10 + 10 = 30  5 + 5 + 5 + 5 = 20	What is the same? What is different? 2 + 2 + 2 = 5 + 5 + 5 = 10 + 10 + 10 = Use objects or a drawing to represent the equal groups and find how many in total.	
Make arrays Children use their knowledge of adding equal groups to arrange objects in columns and rows.	There are … rows of … There are … altogether. There are … columns of … There are … altogether. 		
Make doubles Children understand that doubles are two equal groups. Children may begin to explore doubles beyond 20 using base 10	Double … is … … + … = … 		

Y1 objectives for multiplication and division

*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

Y1 Division

Progression of skills	Key representations	Concrete → pictorial → abstract	
Make equal groups - grouping Encourage children to physically move objects into equal groups. They can also circle equal groups when using pictures.	There are ... altogether. How many groups of ... can you make? 	Circle groups of 2 There are ... groups of 2 	Take ... cubes. Make equal groups.  There are ... groups of ...
Make equal groups – sharing Encourage children to check that the objects have been shared fairly and each group is the same.	... have been shared equally between... There are ... on/in each ... 		Take ... cubes. Share them between ...  12 shared between ... is ...
Find a half Start with practical opportunities to share a quantity into 2 groups. Progress to circling half of the objects in a picture and then to finding the whole from a given half.	To find half, I need to share into 2 equal groups.  There are ... in each group.	Half of ... is ... 	If ... is half, what is the whole?  4 is half of ...
Find a quarter Start with practical opportunities to share a quantity into 4 groups. Progress to using pictures or bar models to find a quarter and then to finding the whole from a given quarter.	To find a quarter, I need to share into 4 equal groups.  There are ... in each group.	A quarter of ... is ... 	If ... is one quarter, what is the whole?  3 is one quarter of ...

Y1 objectives for fractions

*recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity

*recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity

This overview of skills from the White Rose Maths calculation policy illustrates some of the progression steps that children take towards the end of **Year 2 calculations objectives** (addition, subtraction, multiplication and division).

Y2 Addition

Progression of skills	Key representations	Concrete → pictorial → abstract	
Add ones to any number (related facts) Make links to known facts.	I know that … and … = … so … and … = …	… more than … is … so … more than … is …	What do you notice? Can you continue the pattern? 5 + 2 = 7 15 + 2 = 17 25 + 2 = 27…
Add three 1-digit numbers Prompt children to understand that addition can be done in any order and to make links to known facts.	… and … are a bond to 10 10 + … = …	Double … + … = …	What do you notice? Which addition is the easiest to calculate? 8 + 9 + 1 = 8 + 1 + 9 = 9 + 1 + 8 =
Add across a 10 Partition the number being added to make a full ten.	… can be partitioned into … and …	I add … to get to … then I add …	8 + 5 = 13 28 + 5 = 33
Add multiples of 10 Make links to known facts within ten.	… ones + … ones = … ones so … tens + … tens = … tens	What is the same? What is different?	3 + 2 = 5 30 + 20 = 50
Add 10s to any number Make links to known facts.	… tens + … tens = … tens … tens and … ones = …	To add … I need to add 10 … times.	I know that … and … = … so … and … = … 30 + 20 = 50 34 + 20 = 54

Y2 objectives for number and place value

*count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward

*recognise the place value of each digit in a two-digit number (10s, 1s)

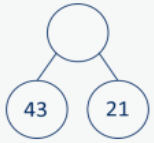
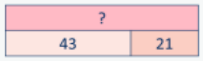
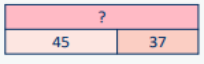
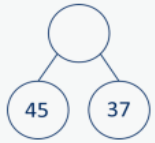
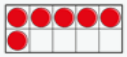
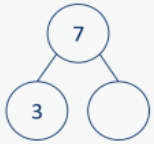
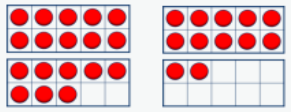
*identify, represent and estimate numbers using different representations, including the number line

*compare and order numbers from 0 up to 100; use <, > and = signs

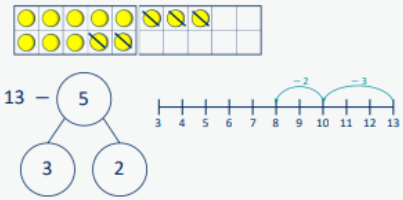
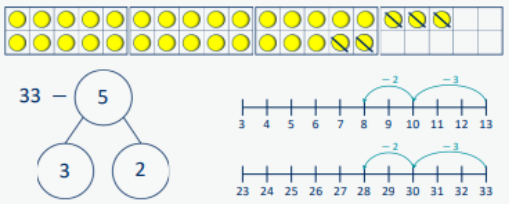
*read and write numbers to at least 100 in numerals and in words

*use place value and number facts to solve problems

Y2 Addition (continued)

Progression of skills	Key representations Concrete → pictorial → abstract		
Add 2-digit numbers (not across a ten) Lining up ones and tens in columns will support with later written methods.	… ones + … ones = … ones … tens + … tens = … tens   3 ones + 1 one = 4 ones 4 tens + 2 tens = 6 tens 6 tens + 4 ones = 64 	
Add 2-digit numbers (across a ten) Begin to exchange 10 ones for 1 ten.	There are …. ones, so I do/do not need to make an exchange. … ones = … ten and … ones    5 ones + 7 ones = 12 ones 12 ones = 1 ten and 2 ones 4 tens + 3 tens + 1 ten = 8 tens 8 tens and 2 ones = 82	
Missing numbers Solve missing number problems and use the inverse to check.	How many more do you need to make …?  6 + □ = 10 10 − □ = 6	If … is a whole and … is a part, then … is the other part. □ + 3 = 7 7 − 3 = □ 	… can be partitioned into … and … 10 + 8 = 12 + □ 

Y2 Subtraction

Progression of skills	Key representations Concrete → pictorial → abstract		
Subtract ones from any number (related facts) Make links to known facts.	I know that … minus … = … so … minus … = … 	… less than … is … so … less than … is … 	What do you notice? Can you continue the pattern? 8 − 3 = 5 18 − 3 = 15 28 − 3 = 25…
Subtract across a 10 Partition the number being subtracted to bridge through a ten.	… can be partitioned into … and … 	Make links with related facts. 	

Y2 objectives for addition and subtraction

*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

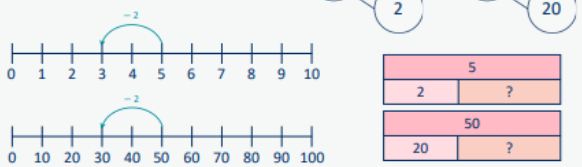
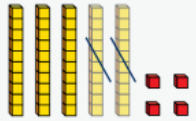
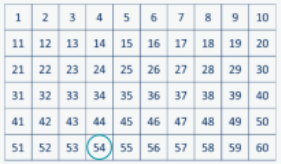
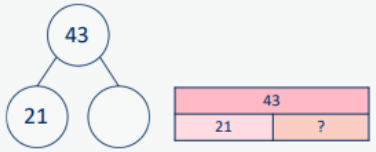
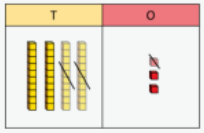
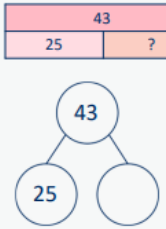
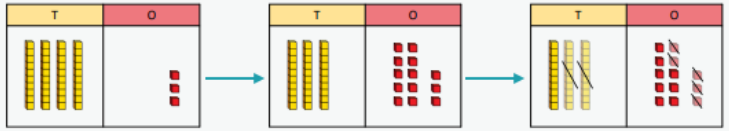
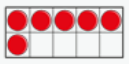
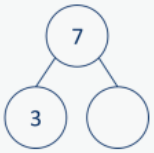
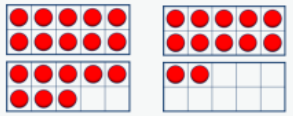
*recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

- a two-digit number and 1s
- a two-digit number and 10s
- 2 two-digit numbers
- adding 3 one-digit numbers

Y2 Subtraction

(continued)

Progression of skills	Key representations	Concrete → pictorial → abstract	
Subtract multiples of 10 Make links to known facts within ten.	… ones − … ones = … ones so … tens − … tens = … tens  5 − 2 = 3 50 − 20 = 30	What is the same? What is different?  	
Subtract 10s from any number Make links to known facts.	… tens − … tens = … tens … tens and … ones = … 	To subtract … I need to subtract 10 … times. 	I know that … minus … = … so … minus … = … 50 − 20 = 30 54 − 20 = 34
Subtract two 2-digit numbers (not across a ten)	… ones − … ones = … ones … tens − … tens = … tens  	 3 ones − 1 one = 2 ones 4 tens − 2 tens = 2 tens 2 tens and 2 ones = 22	
Subtract two 2-digit numbers (across a ten) Begin to exchange 1 ten for 10 ones.	I need to make an exchange because I do not have enough ones to subtract … ones.  3 ones − 5 ones (I need to exchange 1 ten for 10 ones)	 13 ones − 5 ones = 8 ones 3 tens − 2 tens = 1 ten 1 ten and 8 ones = 18	
Missing numbers Solve missing number problems and use the inverse to check.	How many do you need to subtract to make …?  10 − □ = 6 6 + □ = 10	If … is a whole and … is a part, then … is the other part. 7 − 3 = □ □ + 3 = 7  	… can be partitioned into … and … 18 − □ = 12 + 2 

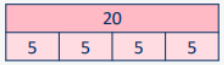
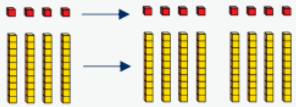
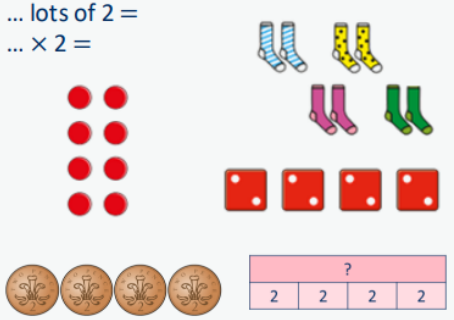
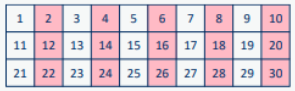
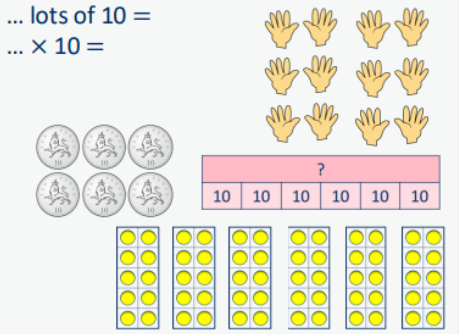
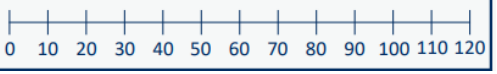
Y2 objectives for addition and subtraction

(continued)

*show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 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

Y2 Multiplication

Progression of skills	Key representations Concrete → pictorial → abstract	
Link repeated addition and multiplication Encourage children to make the link between repeated addition and multiplication.	There are … equal groups with … in each group. There are … altogether.   	3 + 3 = 6 2 × 3 = 6 5 + 5 + 5 + 5 = 20 4 × 5 = 20
Use arrays Encourage children to see that multiplication is commutative.	There are … rows with … in each row. There are … columns with … in each column.  3 lots of 5 = 15 5 + 5 + 5 = 15 5 lots of 3 = 15 3 + 3 + 3 + 3 + 3 = 15	I can see … × … and … ×… 3 × 5 = 15 5 × 3 = 15 3 × 5 = 5 × 3
Double Encourage children to make links with related facts.	Double … is …  Double 4 = 4 + 4 Double 4 is 8	Double … is … so double … is …  Double 4 is 8 Double 40 is 80
The 2 times-table Encourage daily counting in multiples both forwards and back. Notice that all multiples of 2 are even numbers.	… lots of 2 = … × 2 = 	… times 2 is equal to …  1 × 2 = 2 2 = 1 × 2 2 × 2 = 4 4 = 2 × 2 3 × 2 = 6 6 = 3 × 2 
The 10 times-table Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.	… lots of 10 = … × 10 = 	… times 10 is equal to …  1 × 10 = 10 10 = 1 × 10 2 × 10 = 20 20 = 2 × 10 3 × 10 = 30 30 = 3 × 10 

Y2 objectives for multiplication and division

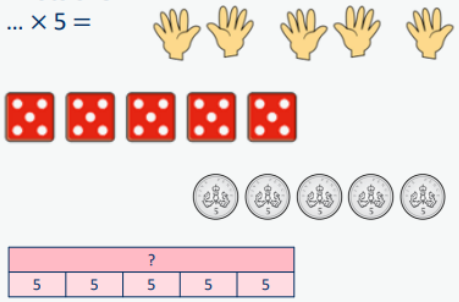
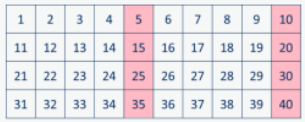
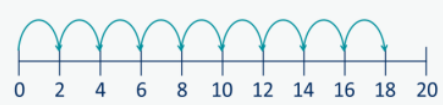
* recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

* calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs

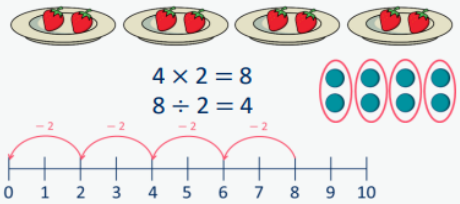
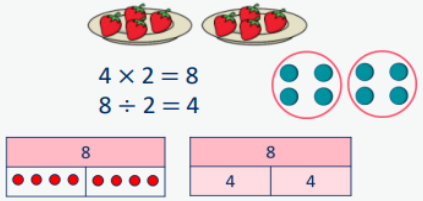
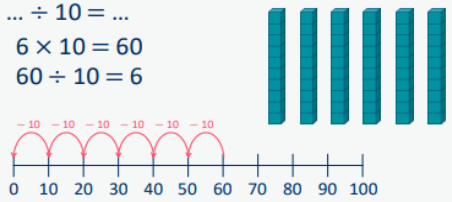
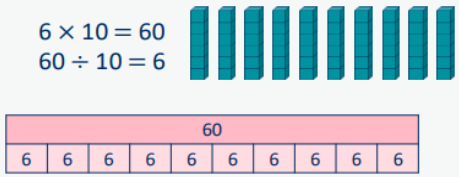
* show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another

Y2 Multiplication

(continued)

Progression of skills	Key representations	Concrete → pictorial → abstract
The 5 times-table Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.	… lots of 5 = … × 5 =  	… times 5 is equal to …  1 × 5 = 5 5 = 1 × 5 2 × 5 = 10 10 = 2 × 5 3 × 5 = 15 15 = 3 × 5 
Missing numbers Make links to known facts.	… is equal to … groups of … 18 socks, how many pairs?  	… times … is equal to … □ × 2 = 18 18 = 2 × □

Y2 Division

Progression of skills	Key representations	Concrete → pictorial → abstract
Divide by 2 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts and halving.	There are … equal groups of 2 … ÷ 2 = …  4 × 2 = 8 8 ÷ 2 = 4 	… shared equally between 2 is … Half of … is … … ÷ 2 = …  4 × 2 = 8 8 ÷ 2 = 4
Divide by 10 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are … equal groups of 10 … ÷ 10 = … 6 × 10 = 60 60 ÷ 10 = 6  	… shared equally between 10 is … … ÷ 10 = … 6 × 10 = 60 60 ÷ 10 = 6 

Y2 objectives for multiplication and division

(continued)

* solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

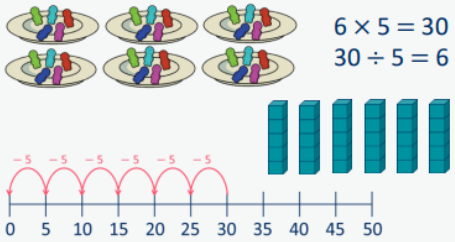
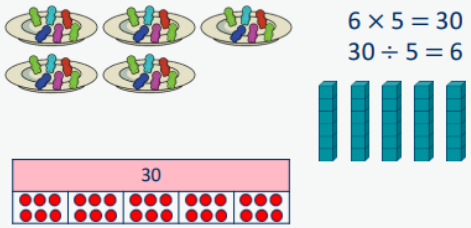
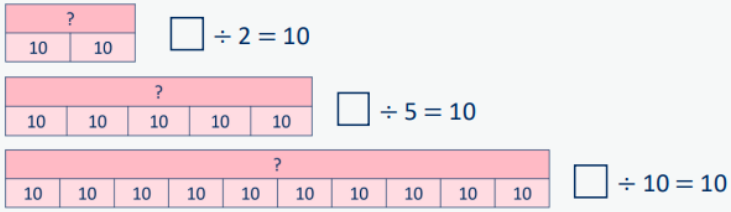
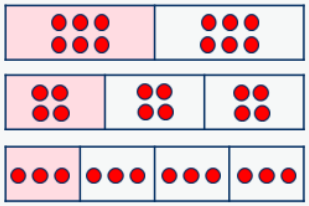
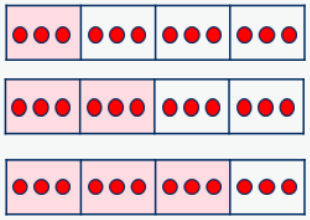
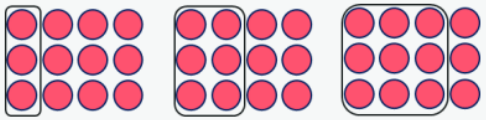
Y2 objectives for fractions

* recognise, find, name and write fractions: 1/3, 1/4, 2/4 and ¾ of a length, shape, set of objects or quantity

* write simple fractions, for example 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2

Y2 Division

(continued)

Progression of skills	Key representations Concrete → pictorial → abstract	
Divide by 5 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are … equal groups of 5 … ÷ 5 = … 	… shared equally between 5 is … … ÷ 5 = … 
Missing numbers Bar models are useful to show the link between multiplication and division.	… divided by 2/5/10 is equal to … 	
Unit fractions In Y2 the focus is on finding $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ Bar models are useful to show the link between division and finding a fraction.	The objects have been shared fairly into … groups. $\frac{1}{\square}$ of … is … 	There are … equal parts. There is … part circled. $\frac{1}{\square}$ is circled. 
Non-unit fractions In Y2 the focus is on finding $\frac{2}{4}$ and $\frac{3}{4}$ Prompt children to notice that $\frac{2}{4}$ is equivalent to $\frac{1}{2}$	The objects have been shared fairly into … groups. $\frac{\square}{\square}$ of … is … 	There are … equal parts. There are … parts circled. $\frac{\square}{\square}$ is circled. 

Geometry, Measures and Statistics

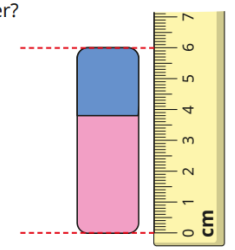
The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. In addition to number, the mathematics curriculum includes measures, geometry and statistics. Learning in these areas begins with hands-on, experiential activities using concrete resources, before moving towards pictorial representations that deepen understanding. Children explore and compare units of measure, investigate the properties of 2-D and 3-D shapes and organise simple data through practical tasks. These areas of mathematics provide rich opportunities for pupils to apply and strengthen their number knowledge in meaningful, real-life contexts, supporting a secure and well-rounded mathematical foundation.

- Would you measure the activities in seconds, minutes or hours?

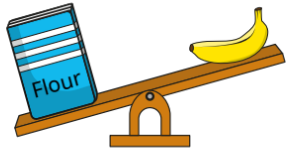
brushing teeth	reading a book	saying the alphabet
travelling on a plane	playing outside	sleeping at night

- Which of the shapes are pentagons?

- How tall is the rubber?



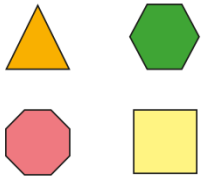
- Which object is lighter?



How do you know?

- Write <, > or = to compare the amounts.

- Complete the sentences.



The triangle has _____ vertices.

The hexagon has _____ vertices.

The _____ has _____ vertices.

The _____ has _____ vertices.

- Complete the tally chart.

Year group	Tally	Total
Year 1	𝍸 𝍸 𝍸	15
Year 2		19
Year 3	𝍸 𝍸 𝍸 𝍸 ||	

- Draw cubes to balance the scales.
  - The mass of the muffin is 4 cubes.