DINNINGTON FIRST SCHOOL

LEARN ENJOY SUCCEED TOGETHER

CALCULATION POLICY

2025

AIMS OF THE POLICY

- To ensure consistency and progression in our approach to calculation and enable a smooth transition between year groups and phases.
- To ensure that children develop an efficient, reliable, method of calculation for all operations.
- To ensure that children can use these methods accurately with confidence and understanding.
- To ensure pupils understand important concepts and make connections within mathematics.
- To ensure pupils show high levels of fluency in performing written and mental calculations.
- To ensure that pupils are ready for the next stage of learning and have been given strong foundations in mental methods, the use of practical equipment, allowed to explore jottings in a range of forms and then to move onto more formal recording using a strong knowledge of place value, number lines labelled or blank, partitioning before eventually using compact formal written methods.
- To ensure that pupils are competent in fluency, reasoning and problem solving and can make informed and appropriate choices about the methods they wish to use (mental or written) to solve mathematical problems efficiently and effectively.

INTRODUCTION

The policy is based on the Whiterose Maths Hub calculation policy to support delivery of the Whiterose maths scheme which we follow. It is set out in subjects, mental strategies, addition, subtraction, multiplication and division. Within each specific area there is a progression of skills, knowledge and layout for written methods that has been agreed by all staff. The calculation strategies which will be used will reflect this ideology – moving from concrete to pictorial and then abstract recording leading to more formal written methods. Mental methods and strategies will work in partnership with these methods.

It has been agreed by all staff that written methods will be supplemented by a variety of mental calculation methods and that use of mental strategies, recall of mathematical facts and use of written methods will be tested / revisited regularly through 'fluent in 5' activities and lesson starters. The progression of mental methods and calculations will comply with the new national curriculum statements 2014 and be in line with the White Rose maths scheme of work which we follow.

The basis of our maths calculation policy is that mental and written methods are integral to each other and should not be seen as taking separate paths but developed in conjunction with each other. It is envisaged that the development of good mental skills will lead greater mathematical confidence as pupils move into more formalised jottings in the form of number lines and partitioning which in turn leads to formal written methods.

It is important to always show the links between operations and not teach them in isolation or without showing, in practical problem solving activities and across all mathematical topics, how these operations can be applied.

It is also important that staff always use correct mathematical language and encourage this from every pupil. This will take place in class discussions as well as through oral and written feedback, next steps and target setting.

The Dinnington First School calculation policy promotes particular methods and procedures with representations alongside to support understanding of calculation, in order to meet requirements. It is vital that consistency in both procedure and conceptual understanding is gained to ensure fluency and confidence with written methods. This policy guides schools in progression for each operation to ensure smooth transition. If at any point a pupil is struggling with a procedure, they should revert to concrete and/or pictorial resources and representations to solidify understanding. Equally, we wish staff and pupils to have the freedom to take the next steps on their mathematical journey when they are ready to do so. If the methods

laid out in the policy are followed, there should not be a problem with advanced progression as pupils move through the school.

However a word of caution should be given here. All staff have the responsibility to make sure that pupils have the depth of knowledge and experiences required to move onto the next stage of their development rather than pushing them on too quickly. This, we have agreed, leads to misconceptions and poor mathematical foundations and eventually, in later years, pupils will not be able to make the required progress.

Ultimately we aim to give pupils the confidence and belief in their own mathematical ability such that they can make informed choices about the methods they use to enable efficient solutions to calculations to be found.

PROGRESSION OF SKILLS GUIDANCE

	EYFS/Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition	Combining two parts to make a whole: part whole model. Starting at the bigger number and counting on- using cubes. Regrouping to make 10 using ten frame.	Adding three single digits. Use of base 10 to combine two numbers.	Column method- regrouping. Using place value counters (up to 3 digits).	Column method- regrouping. (up to 4 digits)	Column method- regrouping. Use of place value counters for adding decimals.	Column method- regrouping. Abstract methods. Place value counters to be used for adding decimal numbers.
Subtraction	Taking away ones Counting back Find the difference Part whole model Make 10 using the ten frame	Counting back Find the difference Part whole model Make 10 Use of base 10	Column method with regrouping. (up to 3 digits using place value counters)	Column method with regrouping. (up to 4 digits)	Column method with regrouping. Abstract for whole numbers. Start with place value counters for decimals- with the same amount of decimal places.	Column method with regrouping. Abstract methods. Place value counters for decimals- with different amounts of decimal places.

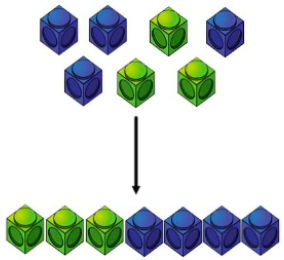
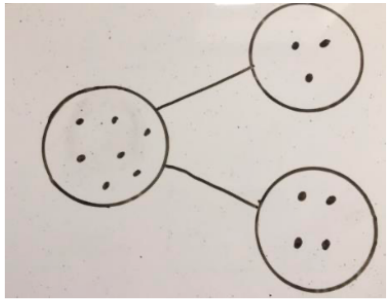
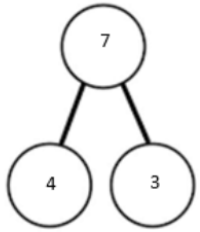
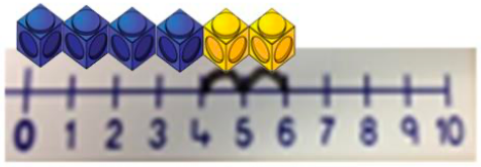
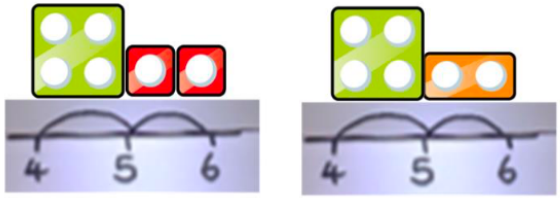
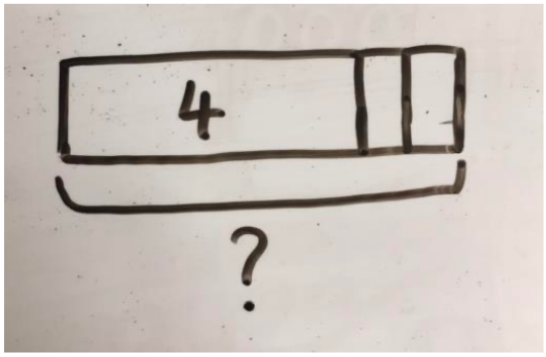
PROGRESSION OF SKILLS GUIDANCE

Multiplication	Recognising and making equal groups. Doubling Counting in multiples Use cubes, Numicon and other objects in the classroom	Arrays- showing commutative multiplication	Arrays 2d × 1d using base 10	Column multiplication- introduced with place value counters. (2 and 3 digit multiplied by 1 digit)	Column multiplication Abstract only but might need a repeat of year 4 first(up to 4 digit numbers multiplied by 1 or 2 digits)	Column multiplication Abstract methods (multi-digit up to 4 digits by a 2 digit number)
Division	Sharing objects into groups Division as grouping e.g. I have 12 sweets and put them in groups of 3, how many groups? Use cubes and draw round 3 cubes at a time.	Division as grouping Division within arrays- linking to multiplication Repeated subtraction	Division with a remainder-using lollipop sticks, times tables facts and repeated subtraction. 2d divided by 1d using base 10 or place value counters	Division with a remainder Short division (up to 3 digits by 1 digit- concrete and pictorial)	Short division (up to 4 digits by a 1 digit number including remainders)	Short division Long division with place value counters (up to 4 digits by a 2 digit number) Children should exchange into the tenths and hundredths column too

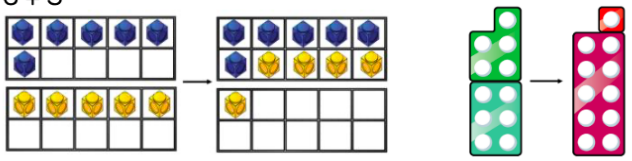
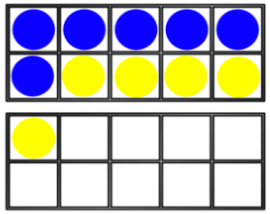
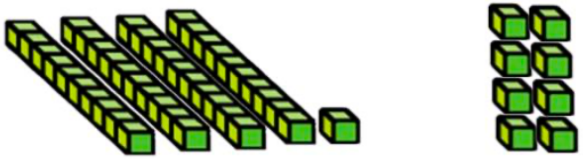
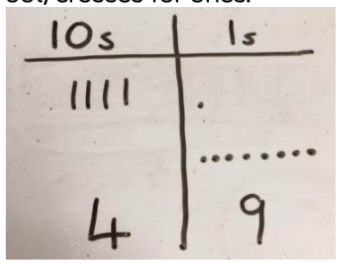
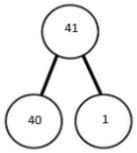
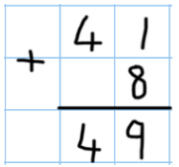
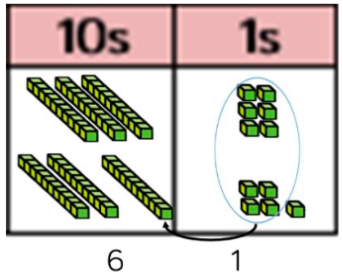
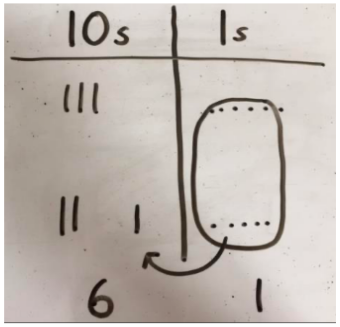
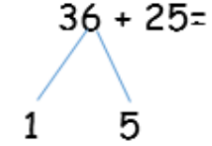
ADDITION NOTES

Key Vocabulary	Mental Skills /	Questions	Equipment / Modelling
add **addition** **plus** **and** **count on more** **sum** **total** **altogether** **increase** **parts and wholes** **'is equal to'** **'is the same as'** **equals** **count on** **pattern** **odd** **even** **double** **round**	• Children should count regularly on and back in equal steps / jumps • Children should memorise and reason with number bonds for numbers to 20 • Children should practice counting forwards in tens from any number. This should lead to adding multiples of 10. • They should use the facts they know to derive others, e.g using 7+3=10 to find 17+3=20 • Children should continue to partition numbers in different ways. • Children should learn to check their calculations, by using the inverse. • Add the nearest multiple of 10, then adjust such as 63 + 29 is the same as 63 + 30 – 1 • Partitioning: compensating eg 138 + 69 is solved with 138 + 70 - 1 Use known facts and place value to find related • Facts eg 24 + 16 = 40 so 240 +160 = 400 Partitioning: using 'near' doubles eg 160 + 170 is • double 150, then add 10, then add 20	• How many altogether? • How many more to make□? • I add □more. What is the total? • How many more is□ than□? • How much more is□? • How many more is□ than□? • How much more is□? Is this true or false? If I know that 17 + 2 = 19, what else do I know? • What patterns can you see? • What's the same? • What's different? • Sometimes, Always , Never? • Can this be done in any order? • Questions in context of money and measure	• Counting apparatus • Place value apparatus • Place value cards • Number tracks • 100 squares • Number fans • Counters • Multilink • Dienes • Numbered number lines • Marked but unnumbered number lines • Empty number lines • Hundred square • Counting stick • Bead string • Numicon • Number grids eg H. T. O • whiteboards

ADDITION

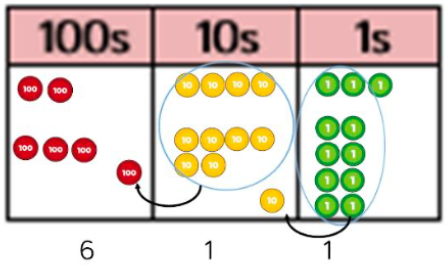
Concrete	Pictorial	Abstract
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars). 	Children to represent the cubes using dots or crosses. They could put each part on a part whole model too. 	4 + 3 = 7 Four is a part, 3 is a part and the whole is seven. 
Counting on using number lines using cubes or Numicon.  	A bar model which encourages the children to count on, rather than count all. 	The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? 4 + 2 

ADDITION

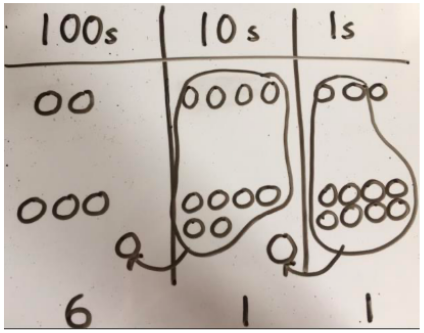
Regrouping to make 10; using ten frames and counters/cubes or using Numicon. 6 + 5 	Children to draw the ten frame and counters/cubes. 	Children to develop an understanding of equality e.g. 6 + □ = 11 6 + 5 = 5 + □ 6 + 5 = □ + 4
TO + O using base 10. Continue to develop understanding of partitioning and place value. 41 + 8 	Children to represent the base 10 e.g. lines for tens and dot/crosses for ones. 	41 + 8  1 + 8 = 9 40 + 9 = 49 
TO + TO using base 10. Continue to develop understanding of partitioning and place value. 36 + 25 	Chidlren to represent the base 10 in a place value chart. 	Looking for ways to make 10.  30 + 20 = 50 5 + 5 = 10 50 + 10 + 1 = 61 Formal method: 36 +25 61 1

ADDITION

Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.

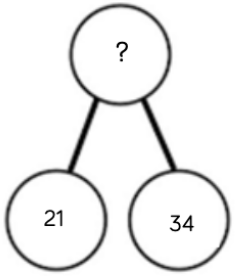


Chidren to represent the counters in a place value chart, circling when they make an exchange.



$$\begin{array}{r} 243 \\ +368 \\ \hline 611 \\ \hline 1\ 1 \end{array}$$

Conceptual variation; different ways to ask children to solve 21 + 34



?	
21	34

Word problems:
In year 3, there are 21 children and in year 4, there are 34 children.
How many children in total?

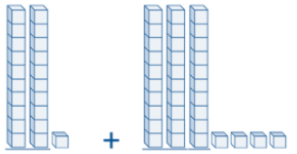
21 + 34 = 55. Prove it

$$\begin{array}{r} 21 \\ +34 \\ \hline \\ \hline \end{array}$$

21 + 34 =

$\square$ = 21 + 34

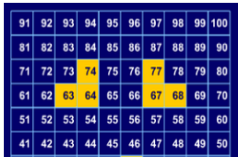
Calculate the sum of twenty-one and thirty-four.



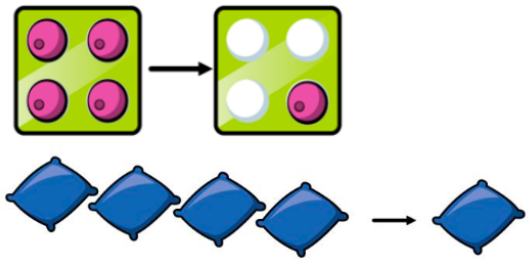
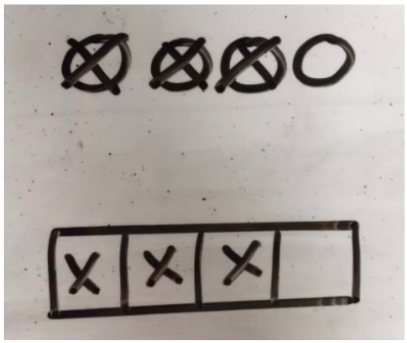
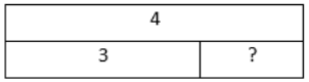
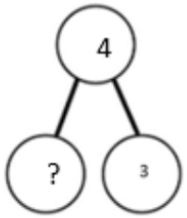
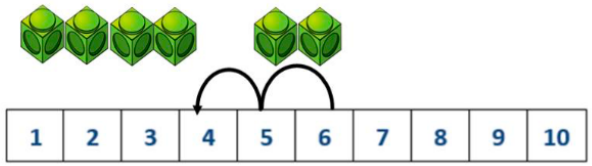
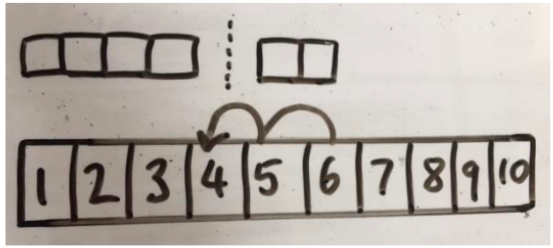
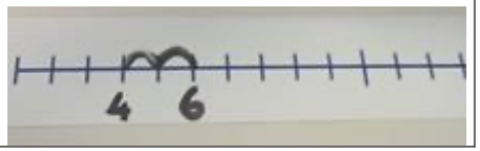
Missing digit problems:

10s	1s
10 10	1
10 10 10	?
?	5

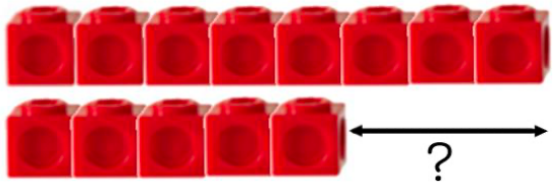
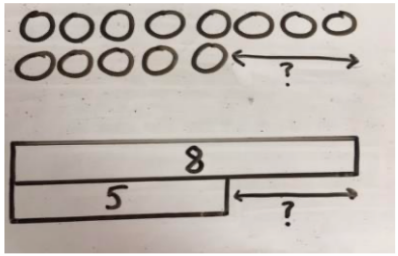
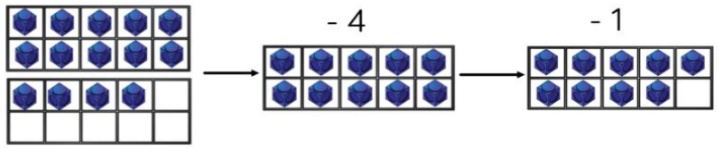
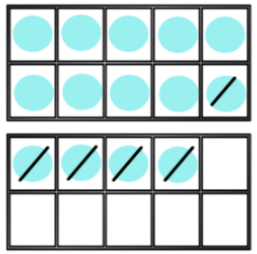
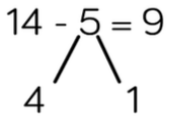
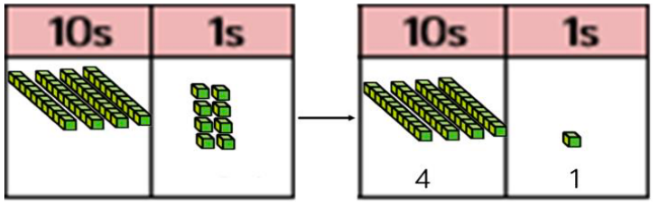
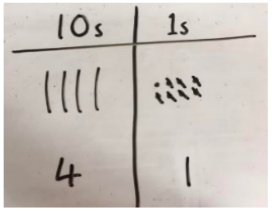
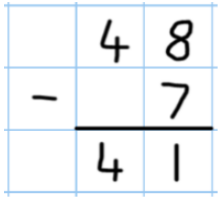
SUBTRACTION NOTES

Key Vocabulary	Mental Skills	Questions	Equipment / Modelling
• subtract • take away • minus • count back • less • fewer • difference between • count on • more than • pattern • odd • even • digit • between • partition • ones, tens, hundreds, thousands	• Children should experience regular counting on and back from different numbers • Children should memorise and reason with number bonds for numbers to 20 • Counting back in tens from any number should lead to subtracting multiples of 10 • practise subtraction to 20 to become increasingly fluent. • use the facts they know to derive others, e.g using 10 - 7 = 3 and 7 = 10 - 3 to calculate 100 - 70 = 30 and 70 = 100 - 30. • as well as number lines, 100 squares could be used to model calculations such as 74 – 11, 77 – 9 •  • Children should continue to partition numbers in difference ways. • Missing number problems e.g. 7 = □ - 9	• How many more to make□? • How many more is□ than□? • How much more is□? • How many are left/left over? • How many have gone? • One less, two less, ten less□ • How many fewer is□ than□? • How much less is□? • If I know that 7 + 2 = 9, what else do I know? • What can you see here? • Is this true or false? • What do you notice? What patterns can you see? • What's the same? What's different? • Sometimes, Always, Never • Calculators → Zap' [e.g. Enter the number 567. Can you 'zap' the 6 digit and make the display say 507 by subtracting 1 number?] • Questions in context of money and measure	• Counting apparatus • Place value apparatus • Place value cards • Number tracks • 100 squares • Number fans • Counters • Multilink • Dienes • Numbered number lines • Marked but unnumbered number lines • Empty number lines • Hundred square • Counting stick • Bead string • Numicon • Number grids eg H. T. O • whiteboards

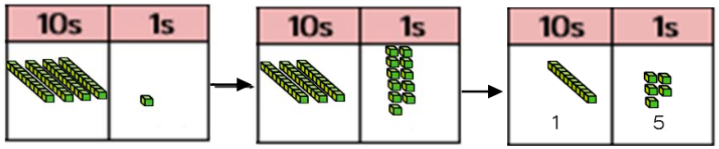
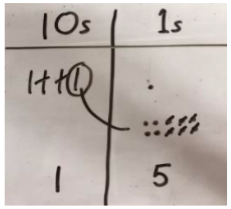
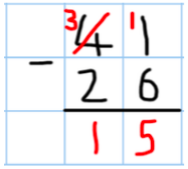
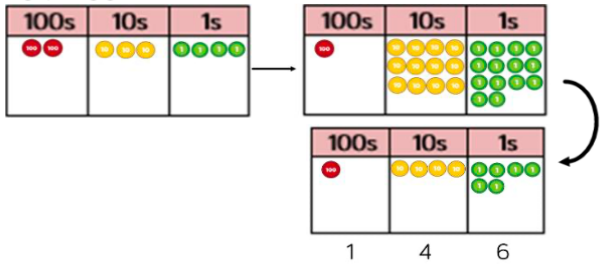
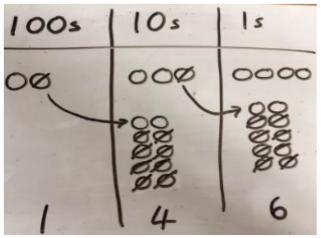
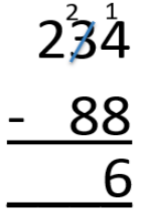
SUBTRACTION

Concrete	Pictorial	Abstract
Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags could be used). 4 – 3 = 1 	Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used. 	4- 3 = □ = 4 – 3  
Counting back (using number lines or number tracks) children start with 6 and count back 2. 6 – 2 = 4 	Children to represent what they see pictorially e.g. 	Children to represent the calculation on a number line or number track and show their jumps. Encourage children to use an empty number line  

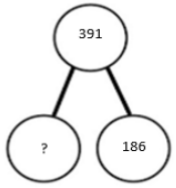
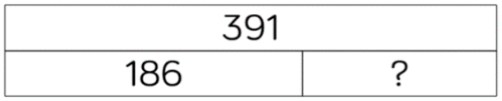
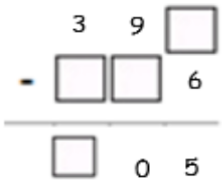
SUBTRACTION

Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used). Calculate the difference between 8 and 5. 	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate. 	Find the difference between 8 and 5. 8 – 5, the difference is ☐ Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference.
Making 10 using ten frames. 14 – 5 	Children to present the ten frame pictorially and discuss what they did to make 10. 	Children to show how they can make 10 by partitioning the subtrahend.  14 – 4 = 10 10 – 1 = 9
Column method using base 10. 48-7 	Children to represent the base 10 pictorially. 	Column method or children could count back 7. 

SUBTRACTION

Column method using base 10 and having to exchange. 41 – 26 	Represent the base 10 pictorially, remembering to show the exchange. 	Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because 41 = 30 + 11. 
Column method using place value counters. 234 – 88 	Represent the place value counters pictorially; remembering to show what has been exchanged. 	Formal colum method. Children must understand what has happened when they have crossed out digits. 

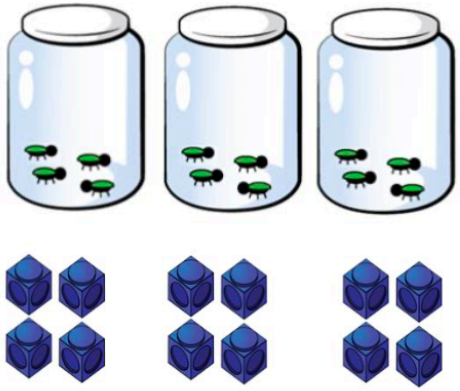
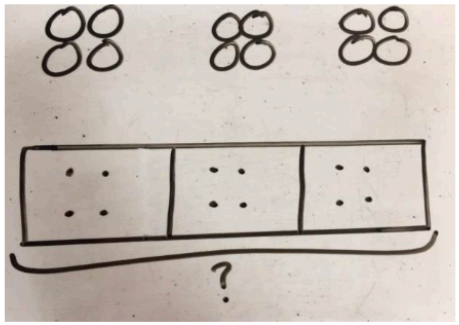
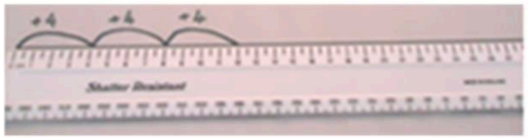
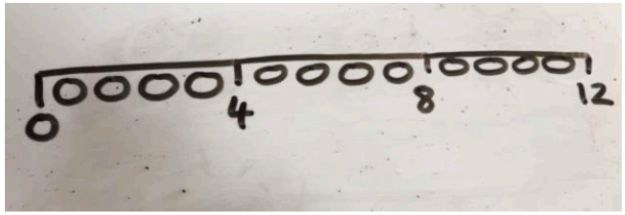
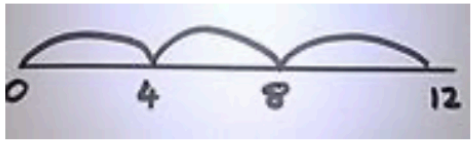
Conceptual variation; different ways to ask children to solve 391 - 186

 	Raj spent £391, Timmy spent £186. How much more did Raj spend? Calculate the difference between 391 and 186.	☐ = 391 – 186 391 -186 ____ What is 186 less than 391?	Missing digit calculations 

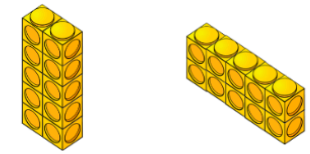
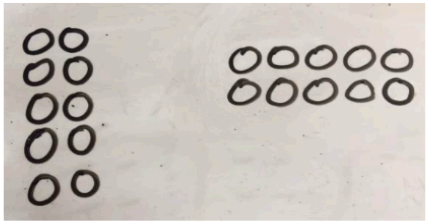
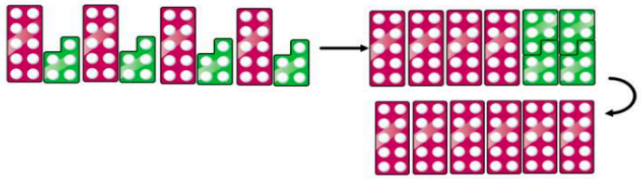
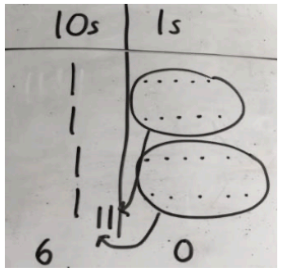
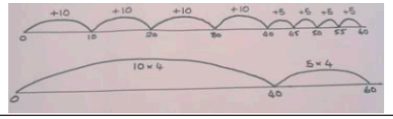
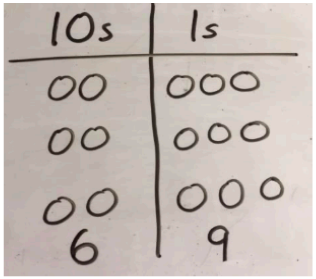
MULTIPLICATION NOTES

Key Vocabulary	Mental Skills	Questions	Equipment / Modelling
• lots of • groups of • times • multiply • multiplication • multiple • product • once, twice, three times… • array • row , column • double • repeated addition • columns • rows • bigger • higher • partition • grid method	• Children should experience regular counting on and back from different numbers • Children should practise times table facts • Children should memorise and reason with numbers in relevant times tables • They should see ways to recognise and represent odd and even numbers. • Use a clock face to support understanding of counting in 5s. Use money to support counting in 2s, 5s, 10s, 20s, 50s • equations with missing digits _2 x 5 = 160 • Solving practical problems where children need to scale up. Relate to known number facts. (e.g. how tall would a 25cm sunflower be if it grew 6 times taller?) • X by 10, 100, 1000 using moving digits	• Why is an even number an even number? • What do you notice? • What's the same? What's different? • Can you convince me? • How do you know? • How many more lots of □ to make□? • How many more times bigger is□ than□? • If I know that 7 x 2 = 14, what else do I know? • What can you see here? • Is this true or false? • What do you notice? • What patterns can you see? • What's the same? What's different? • Sometimes, Always, Never • Calculators → Zap' [e.g. Enter the number 96. Can you 'zap' the 6 digit and make the display say 96 by multiplying by one number?] • Questions in context of money and measure	• Counting apparatus • Place value apparatus • Place value cards • Number tracks • 100 squares • X-table square • Number fans • Counters • Multilink • Dienes • Numbered number lines • Marked but unnumbered number lines • Empty number lines • Hundred square • Counting stick • Bead string • Numicon • Number grids eg H. T. O • Times Table Rocks Stars • X-table 'pairs and inverses' cards • whiteboards

MULTIPLICATION

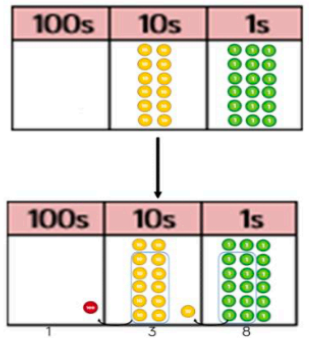
Concrete	Pictorial	Abstract
Repeated grouping/repeated addition 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. 	3 × 4 = 12 4 + 4 + 4 = 12
Number lines to show repeated groups- 3 × 4   Cuisenaire rods can be used too.	Represent this pictorially alongside a number line e.g.: 	Abstract number line showing three jumps of four. 3 × 4 = 12 

MULTIPLICATION

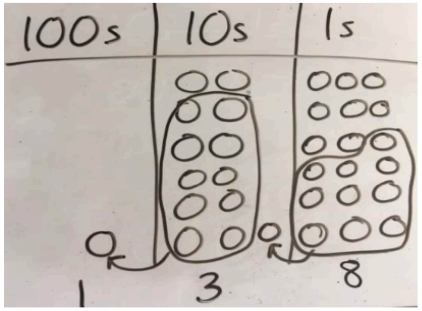
Use arrays to illustrate commutativity counters and other objects can also be used. 2 × 5 = 5 × 2  2 lots of 5 5 lots of 2	Children to represent the arrays pictorially. 	Children to be able to use an array to write a range of calculations e.g. 10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5
Partition to multiply using Numicon, base 10 or Cuisenaire rods. 4 × 15 	Children to represent the concrete manipulatives pictorially. 	Children to be encouraged to show the steps they have taken. 4 × 15 10 5 10 × 4 = 40 5 × 4 = 20 40 + 20 = 60 A number line can also be used 
Formal column method with place value counters (base 10 can also be used.) 3 × 23 	Children to represent the counters pictorially. 	Children to record what it is they are doing to show understanding. 3 × 23 20 3 3 × 20 = 60 3 × 3 = 9 60 + 9 = 69 23 × 3 69

MULTIPLICATION

Formal column method with place value counters.
6 x 23



Children to represent the counters/base 10, pictorially e.g. the image below.



Formal written method

$$6 \times 23 =$$

$$\begin{array}{r} 23 \\ \times\ 6 \\ \hline 138 \\ \hline 1\ 1 \end{array}$$

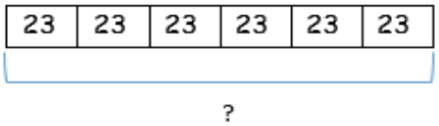
When children start to multiply 3d × 3d and 4d × 2d etc., they should be confident with the abstract:

To get 744 children have solved 6 × 124.
To get 2480 they have solved 20 × 124.

$$\begin{array}{r} 1\ 2\ 4 \\ \times\ \ \ 2\ 6 \\ \hline 7\ 4\ 4 \\ 2\ 4\ 8\ 0 \\ \hline 3\ 2\ 2\ 4 \\ 1\ 1 \end{array}$$

Answer: 3224

Conceptual variation; different ways to ask children to solve 6 × 23



Mai had to swim 23 lengths, 6 times a week.
How many lengths did she swim in one week?

With the counters, prove that 6 x 23 = 138

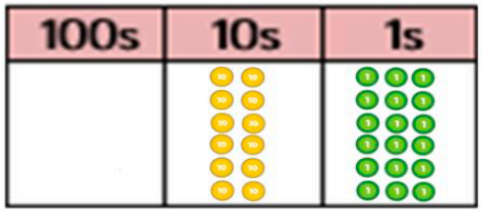
Find the product of 6 and 23

6 × 23 =

☐ = 6 × 23

$$\begin{array}{r} 6 \\ \times\ 23 \\ \hline \end{array} \qquad \begin{array}{r} 23 \\ \times\ 6 \\ \hline \end{array}$$

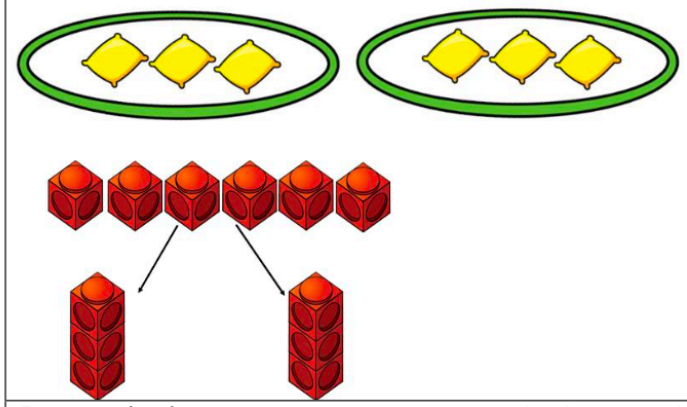
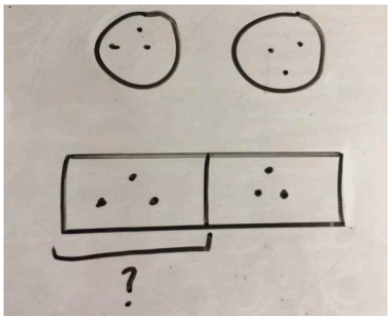
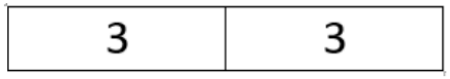
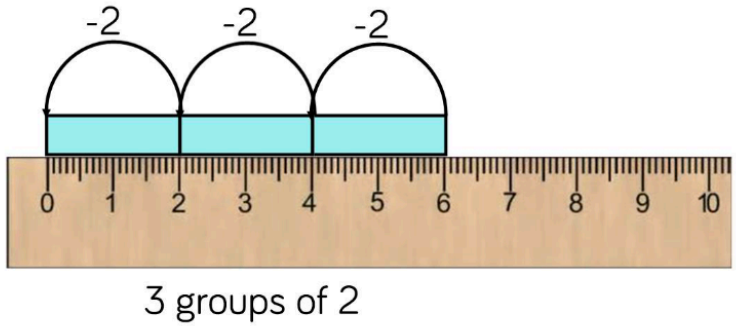
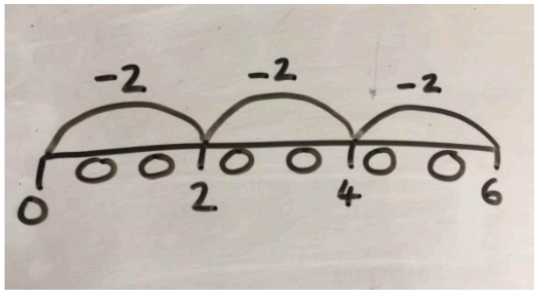
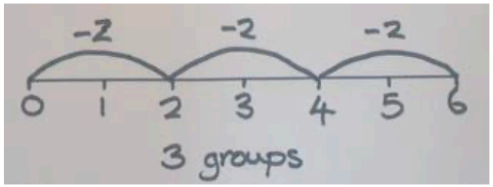
What is the calculation?
What is the product?



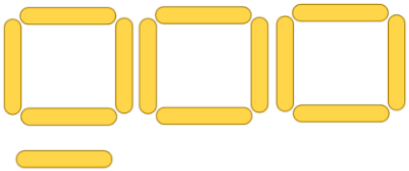
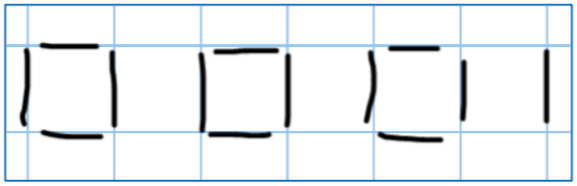
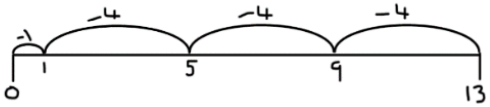
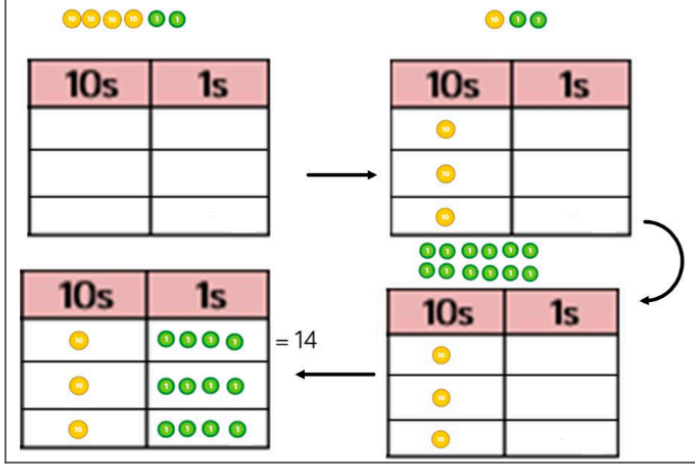
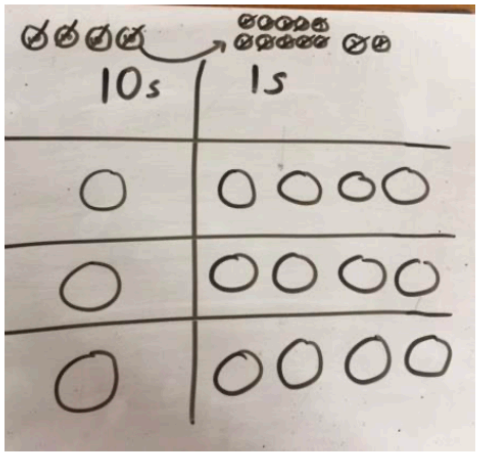
DIVISION NOTES

Key Vocabulary	Mental Skills	Questions	Equipment / Modelling
• lots of • groups of • share • group • halve • half • divide • division • divided by • remainder • factor • quotient • divisible • equally • equal parts • one each, two each … • divisible by • divided into • divisor • inverse	• Children should experience regular counting on and back from different numbers • Children can count using fingers and use this to support 'how many __ are there in __?' • Children should link x facts to ÷ facts • Children should memorise and reason with numbers in relevant times tables • Children should find fractions of numbers linked to their x-tables • Children should find fraction of numbers eg 1/2 ¼ 1/3 , 3/5 • equations with missing digits _2 x 5 = 160 • Solving practical problems where children need to scale up. Relate to known number facts. (e.g. how tall would a 25cm sunflower be if it grew 6 times taller?) • ÷ by 10, 100, 1000 using moving digits	• What do you notice? • Is dividing by 10 the same as dividing by 5 and then dividing by 2? • Can you convince me? • How many 10's can you subtract from___? • How many more lots of □ to make□? • I think of a number and double it. My answer is ___ what was my number? • If I know that 14 ÷ 7 = 2 what else do I know? • What can you see here? • Is this true or false? • Can division be done in any order like multiplication? • Would you prefer to share__ or __ • Sometimes, Always, Never • Calculators → Zap' [e.g. Enter the number 96. Can you 'zap' the 6 digit and make the display say 96 by multiplying by one number?] • Questions in context of money and measure	• Counting apparatus • Place value apparatus • Place value cards • Number tracks • 100 squares • X-table square • Number fans • Counters • Multilink • Dienes • Numbered number lines • Marked but unnumbered number lines • Empty number lines • Hundred square • Counting stick • Bead string • Numicon • Number grids eg H. T. O • Times Table Rocks Stars • X-table 'pairs and inverses' cards whiteboards

DIVISION

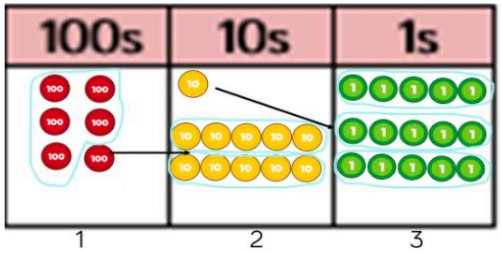
Concrete	Pictorial	Abstract
Sharing using a range of objects. 6 ÷ 2 	Represent the sharing pictorially. 	6 ÷ 2 = 3  Children should also be encouraged to use their 2 times tables facts.
Repeated subtraction using Cuisenaire rods above a ruler. 6 ÷ 2  3 groups of 2	Children to represent repeated subtraction pictorially. 	Abstract number line to represent the equal groups that have been subtracted. 

DIVISION

2d ÷ 1d with remainders using lollipop sticks. Cuisenaire rods, above a ruler can also be used. 13 ÷ 4 Use of lollipop sticks to form wholes- squares are made because we are dividing by 4.  There are 3 whole squares, with 1 left over.	Children to represent the lollipop sticks pictorially.  There are 3 whole squares, with 1 left over.	13 ÷ 4 = 3 remainder 1 Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line. '3 groups of 4, with 1 left over' 
Sharing using place value counters. 42 ÷ 3 = 14 	Children to represent the place value counters pictorially. 	Children to be able to make sense of the place value counters and write calculations to show the process. 42 ÷ 3 42 = 30 + 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14

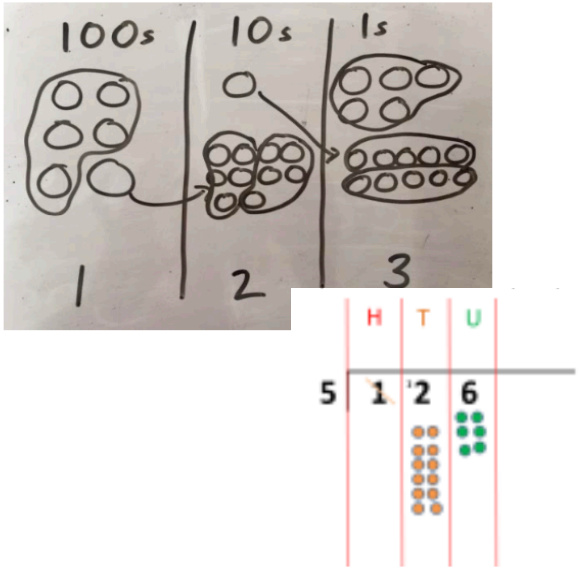
DIVISION

Short division using place value counters to group.
615 ÷ 5



1. Make 615 with place value counters.
2. How many groups of 5 hundreds can you make with 6 hundred counters?
3. Exchange 1 hundred for 10 tens.
4. How many groups of 5 tens can you make with 11 ten counters?
5. Exchange 1 ten for 10 ones.
6. How many groups of 5 ones can you make with 15 ones?

Represent the place value counters pictorially.

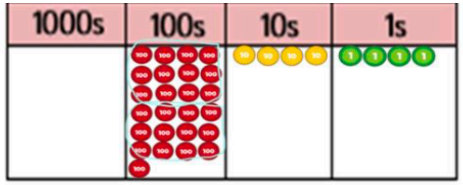


Children to the calculation using the short division scaffold.

$$5\overline{)615}$$

Long division using place value counters
2544 ÷ 12

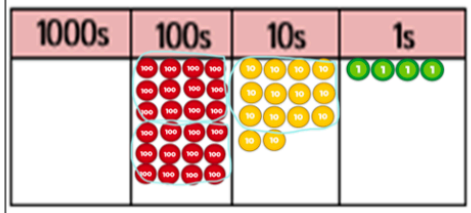
We can't group 2 thousands into groups of 12 so will exchange them.



We can group 24 hundreds into groups of 12 which leaves with 1 hundred.

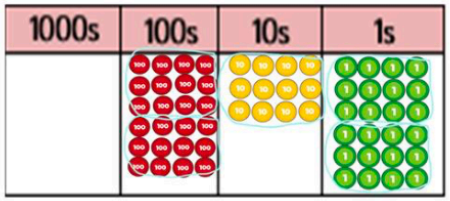
$$\begin{array}{r} 02 \\ 12\overline{)2544} \\ 24 \\ \hline 1 \end{array}$$

DIVISION



After exchanging the hundred, we have 14 tens. We can group 12 tens into a group of 12, which leaves 2 tens.

$$\begin{array}{r} 021 \\ 12\overline{)2544} \\ 24 \\ \hline 14 \\ 12 \\ \hline 2 \end{array}$$

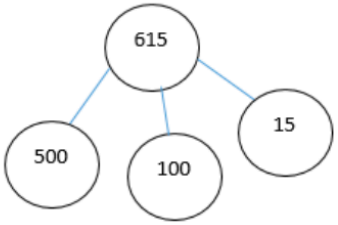


After exchanging the 2 tens, we have 24 ones. We can group 24 ones into 2 group of 12, which leaves no remainder.

$$\begin{array}{r} 0212 \\ 12\overline{)2544} \\ 24 \\ \hline 14 \\ 12 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

Conceptual variation; different ways to ask children to solve 615 ÷ 5

Using the part whole model below, how can you divide 615 by 5 without using short division?



I have £615 and share it equally between 5 bank accounts. How much will be in each account?

615 pupils need to be put into 5 groups. How many will be in each group?

$5\overline{)615}$

615 ÷ 5 =

☐ = 615 ÷ 5

What is the calculation?
What is the answer?

NON-NEGOTIABLE SKILLS

It is an expectation that most pupils have these skills by the end of the year group. Repetition and revising will be needed to ensure these non negotiables are secure

Nursery Class

Key fact		
Place Value	Recite numbers in order to 10	
	Count up to 10 objects in a group	
	Represent numbers using fingers	
	Recognise written numerals up to 10	
	Match a number and quantity correctly	
	Compare 2 groups of numbers, saying if they are the same/different	
	Count movements e.g. jumps, stamps, claps	

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Reception Class

Key fact		
Place Value	To count from 1 - 20	
	Count up to 20 objects in a group	
	Recognise and order written numerals up to 20	
	Match a number and quantity correctly	
Add and Subtract Numbers	Say 1 more or 1 less than a given number to 20	
	Add and Subtract 2 single digit numbers	
	Add and Subtract by using a number line	
	To double numbers	
Division	To halve numbers	
	To share amounts equally	

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Year 1

Key fact		
Place Value	To count from 1 - 100	
	Count in 2's, 5's, 10's	
	Recognise and order odd and even numbers	
	Recognise the place value of digits; tens and units	
Add and Subtract Numbers	Know number bonds of 10 then to 20	
	Add and subtract 1 digit and 2 digit numbers to 20	
	To count on or back from any number	
Multiplication And Division	Count in multiples of 2's, 5's, 10's (relate to times tables)	
	Use concrete objects to work out multiplication and division – begin to use arrays	
Fractions	Find ½ or ¼ of a shape, object or quantity	
Measure	Know the days of the week and months of the year	
	Tell the time to the hour and half hour	

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Year 2

Key fact		
Place Value	Recognise the place value of digits; hundreds, tens and units	
	Compare, order, read and write numbers in words and numerals up to 100	
	Count from 0 in multiples of 2, 3 and 5	
	Can partition numbers	
Add and Subtract Numbers	Can quickly recall number bonds of addition and subtraction of 10 then 20	
	Use formal written methods for addition and subtraction (see policy)	
Multiplication and Division	Recall multiplication and division facts for the 2, 5 and 10 times table	
	Multiply and divide numbers by 10	
	Use agreed methods for solving multiplication and division e.g arrays (see policy)	
Fractions	Find fractions 1/3 or ¼ of a length, shape or set of objects	
	Calculate simple fractions of a number	
Measure	Tell the time using quarter past and quarter to	
	Tell the time to the nearest 5 minutes	

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Year 3

Key fact		
Place Value	Recognise the place value of digits; hundreds, tens and units	
	Compare, order, read and write numbers in words and numerals up to 1000	
	Count from 0 in multiples of 4, 8, 50 and 100	
	Find 10 more or 10 less than a given number	
Add and Subtract Numbers	Continue to revise number bonds of 10, 20, 100	
	Add and Subtract numbers mentally including 3 digit and ones; 3 digit and 10's; 3 digit and 100's	
	Use formal columnar written methods for addition and subtraction (see policy)	
Multiplication and Division	Recall multiplication and division facts for the 3,4,8 times table Revise 2,5,10 times tables	
	Use formal written methods of multiplication and division	
Fractions	Counting in tenths	
	Find fractions of a set of objects	
	Compare and order unit fractions	
Measure	Read time to the nearest minute	

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Year 4

Key fact		
Place Value	Recognise the place value of digits; thousands, hundreds, tens and units then tenths, hundredths, thousandths for decimals	
	Count from 0 in multiples of 6, 7, 9, 25, 1000	
	Count backwards through zero to include negative numbers	
	Round any number to the nearest 10, 100, 1000; round decimals with 1 decimal place to the nearest whole number	
	Compare numbers beyond 1000	
Add and Subtract Numbers	Add and Subtract 4 digit numbers using formal column written methods (see policy)	
	Apply number bonds of 10,20, 100 when calculating mentally	
Multiplication and Division	Recall multiplication and division facts for all multiplication tables up to 12x12	
	Use formal written methods of multiplication and division (see policy) up to 3 digits x 1 digit	
	Multiply and divide numbers by 10,100 and 1000	
Fractions	Find fractions of a set of objects, length, weight	
	Recognise common equivalent fractions	
	Recognise fraction and decimal equivalents	
	Add and subtract fractions with the same denominator	
Measure	Read time to the nearest minute	
	Know the time on the 12 and 24 hour clock – solve time problems involving converting hours to minutes	