St Ann's R.C. Primary School

Maths Calculation Policy

Love, Respect, Service

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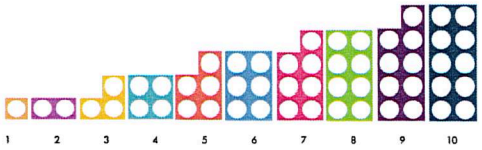
Addition – EYFS

Maths for young children should be meaningful. Where possible, concepts should be taught in the context of real life. The Nursery objectives are from Development Matters 3-4 are for working up to 5, counting in ones. Subitise up to 3

Guidance / models and images	Key vocabulary
When available, Numicon shapes are introduced straight away and can be used to: • Identify 1 more/less N/R • Combine pieces to add N/R (with composition of numbers to 10 for R) • Find number bonds/number bonds to 5/10 R  Children begin to combine groups of objects using concrete apparatus N/R Construct number sentences verbally N/R Children are encouraged to read number sentences aloud in different ways. Three add two equals 5. 5 is equal to three and two R Children make a record in pictures, words or symbols of addition activities already carried out R Solve simple problems using fingers leading to 5+1=6 for R Number tracks can be introduced to count up on and to find one more. R  What is 1 more than 4? N Building numbers beyond 10 – 1 more than 13 R Number lines can be used alongside number tracks and practical apparatus to solve addition calculations and word problems. R Children will need opportunities to look at and talk about different models and images as they move between representations. R	Games and songs can be a useful way to begin using vocabulary involved in addition. Vocabulary introduced in N: Add More And Make Sum Total Altogether Score Double One more, two more, ten more..... Leading to R vocabulary: How many more to make.....? How many more is....than....?

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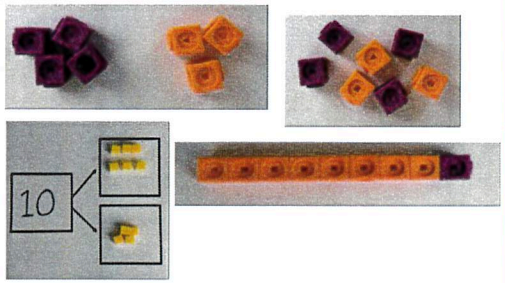
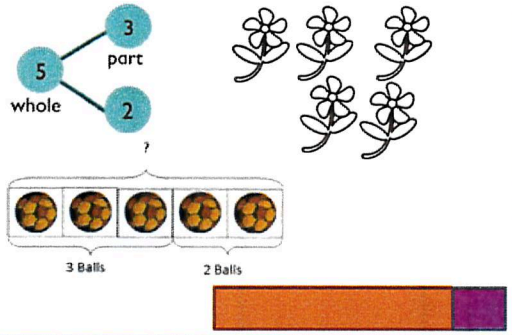
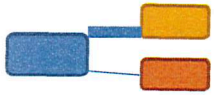
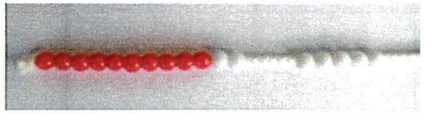
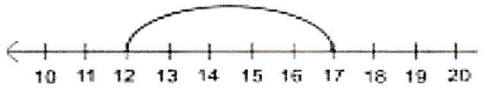
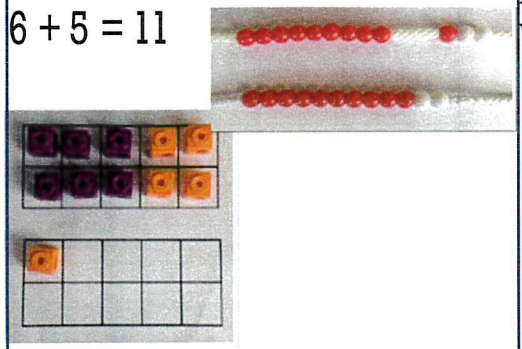
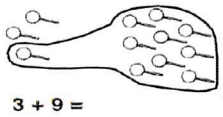
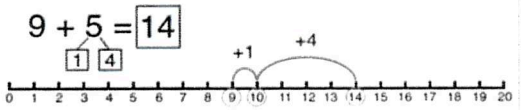
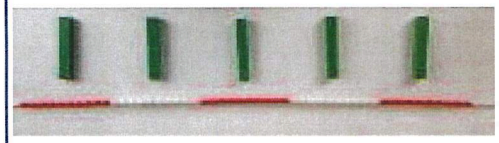
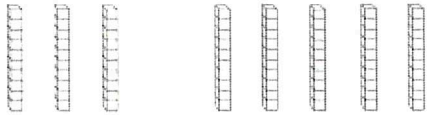
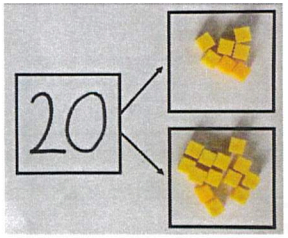
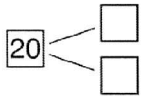
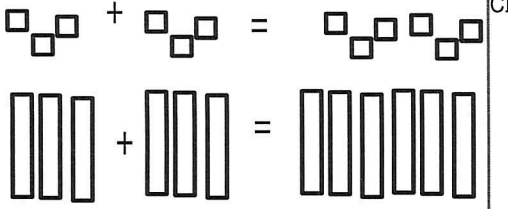
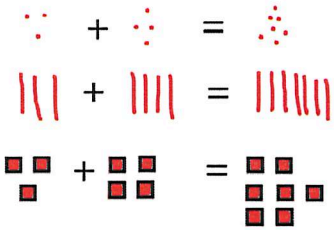
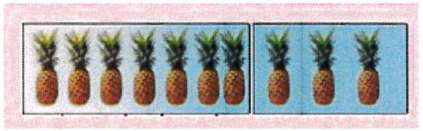
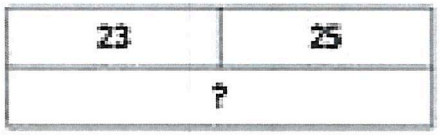
Y1 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Combining two parts to make a whole part-whole model	Use part-part-whole model. Use cubes to add two numbers together as a group or in a bar. 	Use pictures to add two numbers together as a group or in a bar. 	Use the part-part-whole diagram as shown to move into the abstract.  4 + 3= 7 10 = 6 +4
Counting on	Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer. 	Start at the larger number on the number line and count on in ones or in one jump to find the answer.  12 + 5 = 17	Place the larger number in your head and count on the smaller number to find your answer. 12 + 5 = 17
Regrouping to make 10 *This is an essential skill for column addition later.*	Start with the bigger number and use the smaller number to make 10. Use ten frames. 6 + 5 = 11 	Use pictures or a number line. Regroup or partition the smaller number using the part-part-whole model to make 10.  	If I am at seven, how many more do I need to make 10. How many more do I add on now? 7 + 4 = 11

Y2 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Adding multiples of ten	Model using dienes and bead strings. 50 = 30 + 20 	Use representations for base ten.  3 tens + 5 tens = ____ tens 30 + 50 = ____	20 + 30 = 50 70 = 50 + 30 40 + □ = 60
Use known number facts Part-part-whole	Children explore ways of making numbers within 20. 	 □ + □ = 20 20 − □ = □ □ + □ = 20 20 − □ = □	□ + 1 = 16 16 − 1 = □ 1 + □ = 16 16 − □ = 1
Using known facts		Children draw representations of H,T and O. 	3 + 4 = 7 *leads to* 30 + 40 = 70 *leads to* 300 + 400 = 700
Bar model	 3 + 4 = 7	 7 + 3 = 10	 23 + 25 = 48

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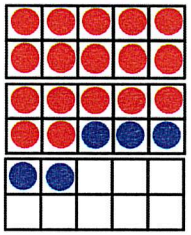
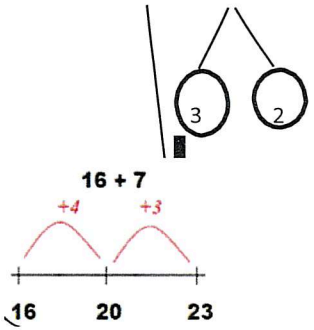
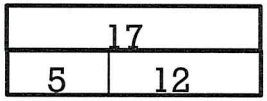
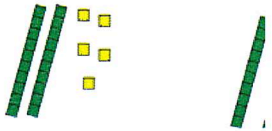
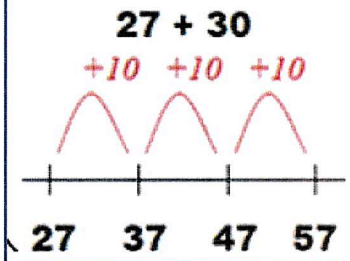
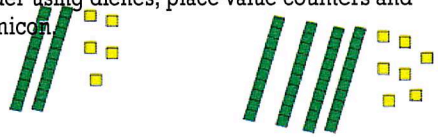
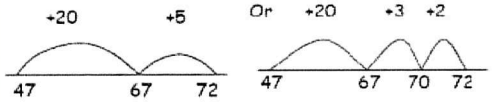
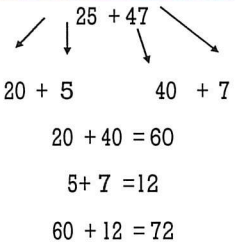
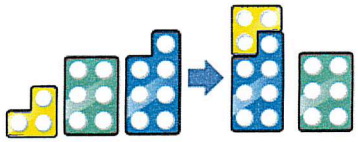
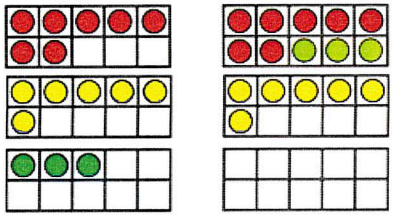
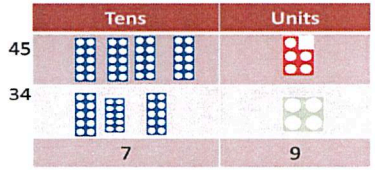
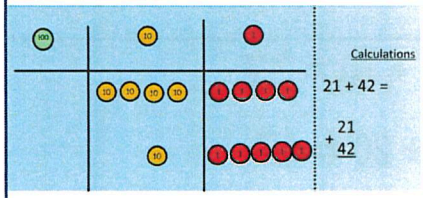
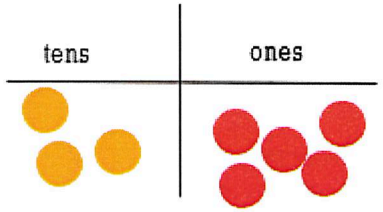
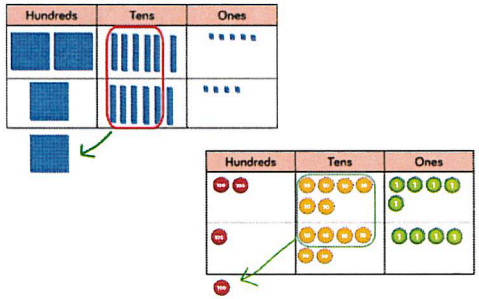
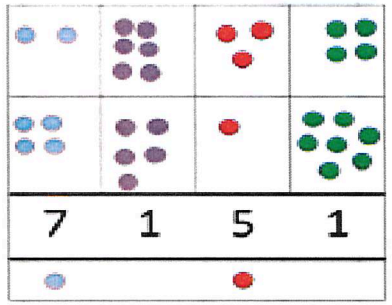
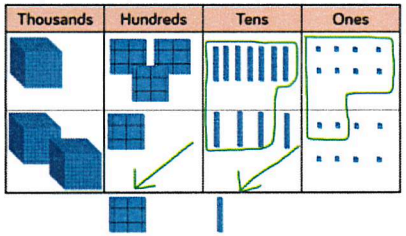
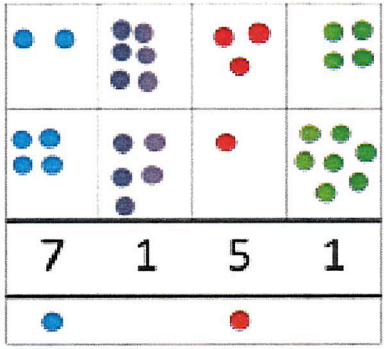
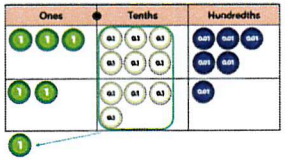
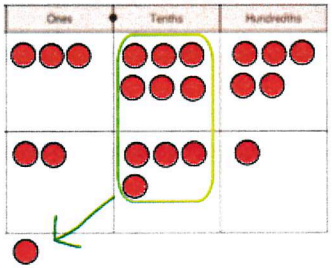
Y2 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Add a two-digit number and ones – focus on different manipulatives and partitioning.	Use ten frame to make 'magic ten.'  17 + 5 = 22 Children explore the pattern. 17 + 5 = 22 27 + 5 = 32	Use partitioning to create a ten. 	Explore related facts. 17 + 5 = 22 5 + 17 = 22  22—17 = 5 22—5 = 17
Add a 2-digit number and tens	Explore that the ones digit does not change.  25 + 10 = 35		27 + 10 = 37 27 + 20 = 47 27 + □ = 57
Add two 2-digit numbers (extending to formal addition where appropriate)	Model using dienes, place value counters and Numicon. 	Use number line and bridge ten using part-whole if necessary. 	
Add three 1-digit numbers	Combine to make 10 first if possible, or bridge 10 then add third digit. 	Regroup and draw representation. 	Combine the two numbers that make/bridge ten then add on the third. 7 + 6 + 3 = 16 10

Y3 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Column Addition— no regrouping (up to 3 digit numbers)	Model using Dienes or Numicon Add together the ones first, then the tens.  Move to using place value counters. 	Children move to drawing the counters using a tens and one frame. 	Add the ones first, then the tens, then the hundreds. 2 2 3 + 1 1 4 3 3 7
Column Addition with regrouping (up to 3 digit numbers)	Exchange ten ones for a ten/ ten tens for a hundred. Model using numicon, Base 10 and counters. 	Children can draw a representation of the grid to further support their understanding, carrying the ten **underneath** the line. 	Start by partitioning the numbers before formal column to show the exchange. 3 8 5 + 1 3 7 5 2 2 1 1

Y4-6 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Y4 Add numbers with up to 4 digits Add numbers with more than 4 digits.	Children continue to use dienes or pv counters to add, exchanging ten ones for ten and ten tens for a hundred and ten hundreds for a thousand. 		1378 + 2148 3526 1 1
Y5 Add decimals with the same number of decimal places, including money.	As Y4 plus Introduce decimal place value counters and model exchange for addition. 		3.65 + 2.41 6.06 1 £23.59 + £7.55 £31.14
Y6 Add several numbers of increasing complexity Including adding money, measure and decimals with different numbers of decimal points.	As Y5	As Y5	81,059 3,668 15,301 + 20,551 120,579 1 1 1 1 Insert zeros for place holders. 23.361 9.080 59.770 + 1.300 93.511 2 1 2

Subtraction –EYFS

GUIDANCE / MODELS AND IMAGES	KEY VOCABULARY
Children begin with mostly pictorial representations XXX XX Concrete apparatus is used to relate subtraction to taking away and counting how many objects are left. Concrete apparatus models the subtraction of 2 objects from a set of 5. Construct number sentences verbally or using cards to go with practical activities. Children are encouraged to read number sentences aloud in different ways "five subtract one leaves four" "four is equal to five subtract one" Children make a record in pictures, words or symbols of subtraction activities already carried out. Solve simple problems using fingers 5 - 1 = 4 Number tracks can be introduced to count back and to find one less: 1 2 3 4 5 6 What is 1 less than 9? 1 less than 20? Number lines can then be used alongside number tracks and practical apparatus to solve subtraction calculations and word problems. Children count back under the number line. 8 - 3 = 5 **Children will need opportunities to look at and talk about different models and images as they move between representations.**	**Games and songs can be a useful way to begin using vocabulary involved in subtraction e.g.** Five little men in a flying saucer take (away) leave how many are left/left over? how many have gone? one less, two less... ten less... how many fewer is... than...? difference between is the same as

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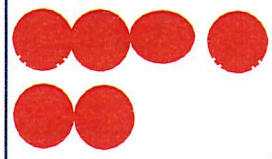
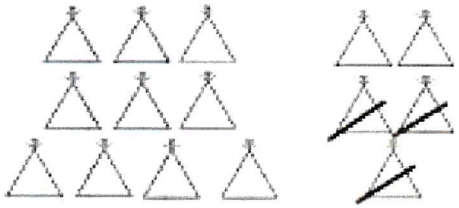
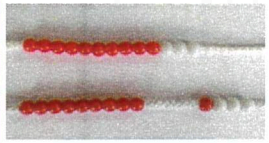
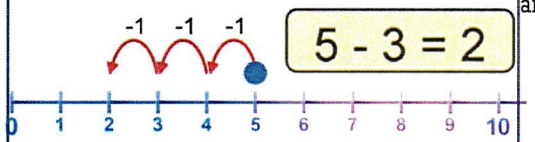
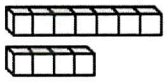
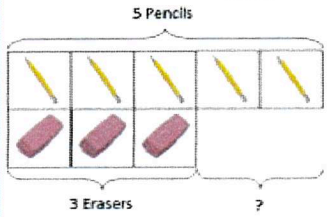
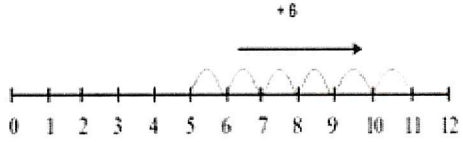
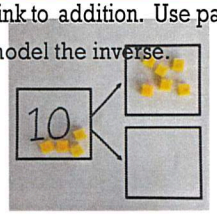
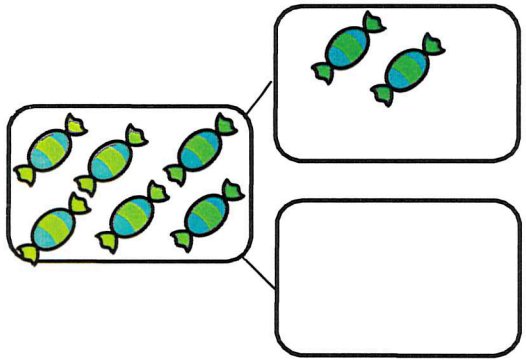
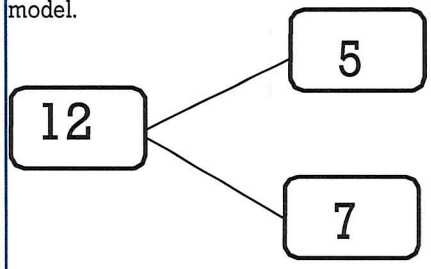
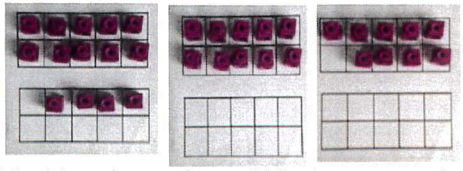
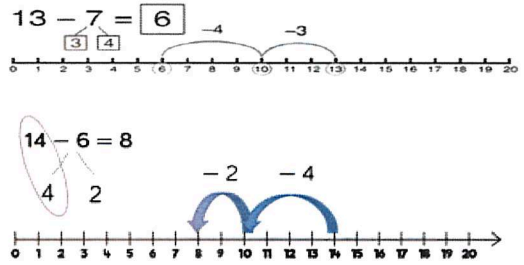
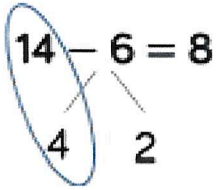
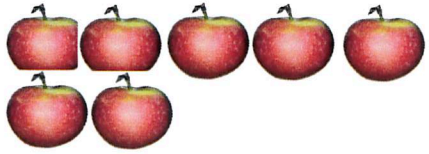
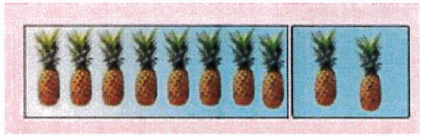
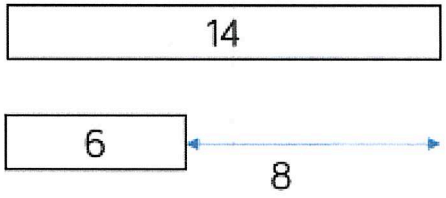
Y1 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Taking away ones	Use physical objects; counters, cubes etc to show how objects can be taken away.  6—4 = 2  4—2 = 2	Cross out drawn objects to show what has been taken away.  15 – 3 = 12	7—4 = 3 16—9 = 7
Counting back	Move objects away from the group, counting backwards.  Move the beads along the bead string as you count backwards. 	Count back in ones using a number line. 	Put 13 in your head, count back 4. What number are you at?
Find the difference	Compare objects and amounts. Lay objects to represent bar model.  7 'Seven is 3 more than four' 4 'I am 2 years older than my sister' 	Count on using a number line to find the difference. 	Hannah has12 sweets and her sister has 5. How many more does Hannah have than her sister.?

Y1 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Represent and use number bonds and related subtraction facts within 20 Part-part-whole model	Link to addition. Use part-part-whole model to model the inverse.  If 10 is the whole and 6 is one of the arts, what s the other part? 10—6 = 4	Use pictorial representations to show the part. 	Move to using numbers within the part whole model. 
Make 10	14—9  Make 14 on the ten frame. Take 4 away to make ten, then take one more away so that you have taken 5.	Use partioning knowledge to subtract to nearest ten.  	How many do we take off first to get to 10? How many left to take off? 
Bar model	 5—2 = 3		 10 = 8 + 2 10 = 2 + 8 10—2 = 8 10—8 = 2

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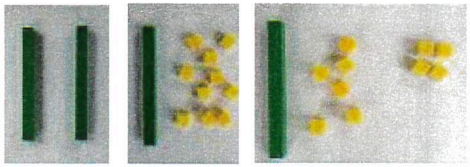
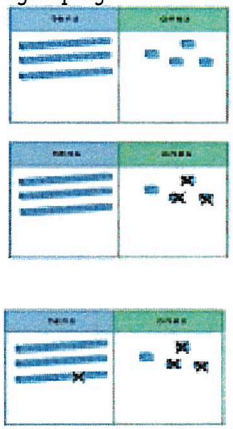
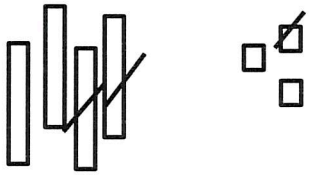
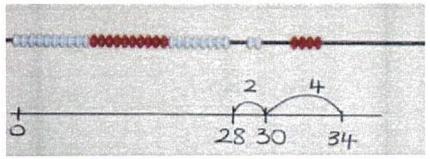
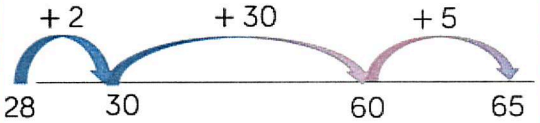
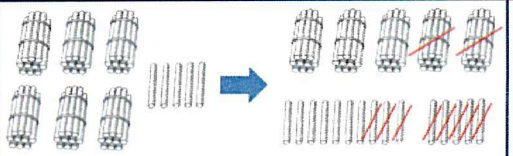
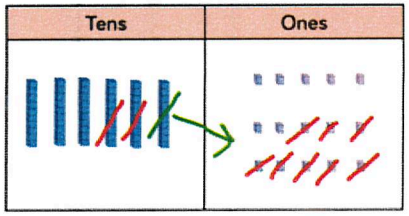
Y2 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Regroup a ten into ten ones	Use a PV chart to show how to change a ten into ten ones, use the term 'take and make.' 	 20 – 4 =	20—4 = 16
Partitioning to subtract without regrouping	Use Dienes to show how to partition the number when subtracting without regrouping. 34—13 = 21 	Children draw representations of Dienes and cross off. 43—21 = 22 	43—21 = 22
Make ten strategy *Progression should be crossing one ten, crossing more than one ten, crossing the hundreds.*	Use a bead bar or bead strings to model counting to next ten and the rest. 34—28 	Use a number line to count on to next ten and then the rest. 	93—76 = 17
Subtract up to 2-digit numbers			Column subtraction with exchanging. $\begin{array}{r} {}^{5}\not{6}\,{}^{1}\not{5} \\ -\ 28 \\ \hline 37 \end{array}$

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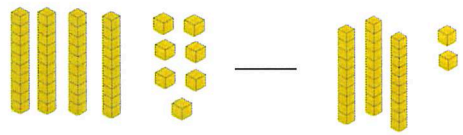
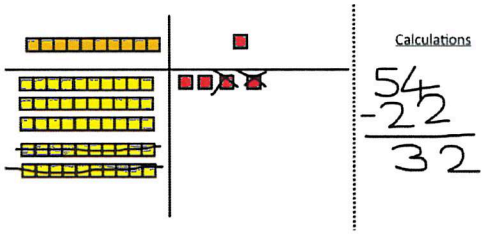
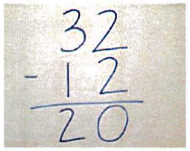
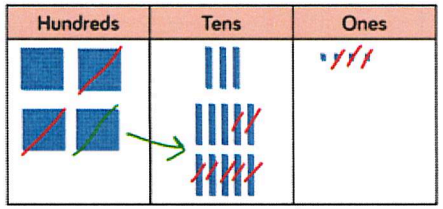
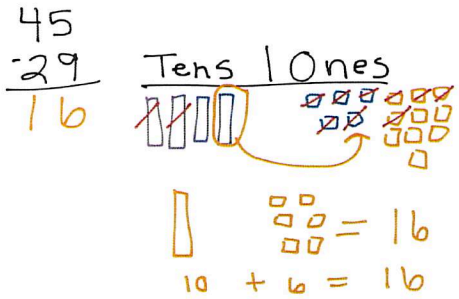
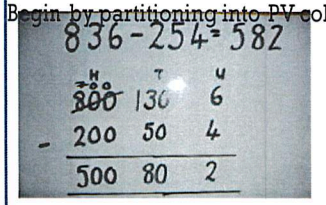
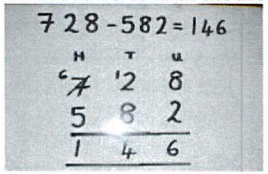
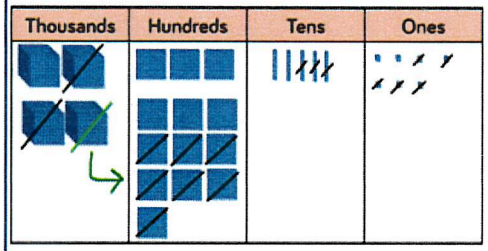
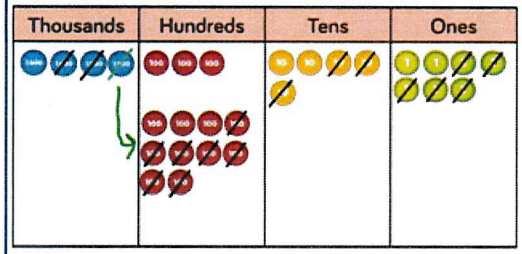
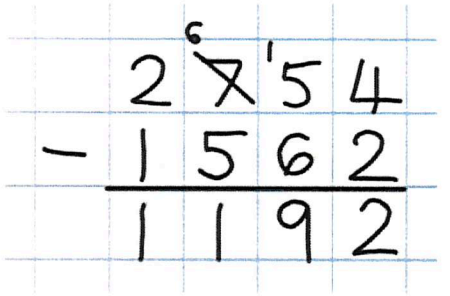
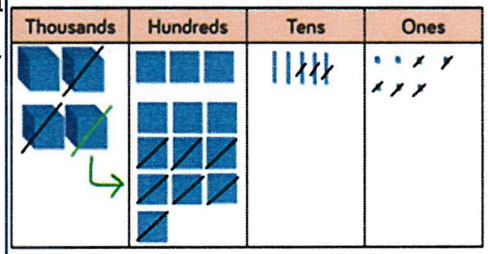
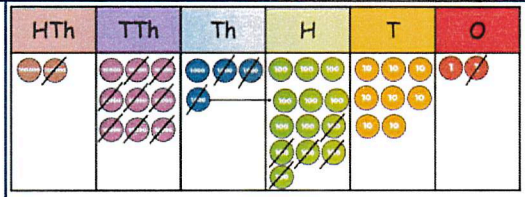
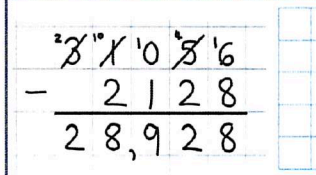
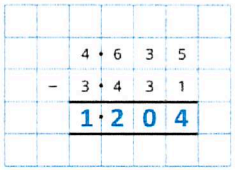
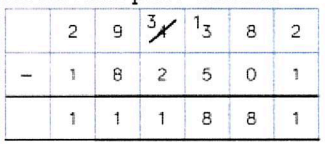
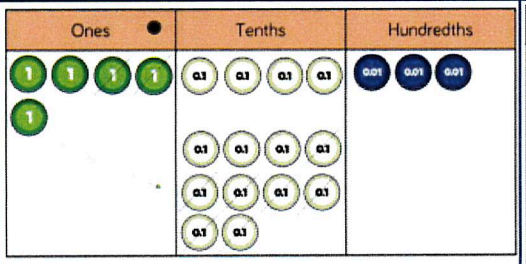
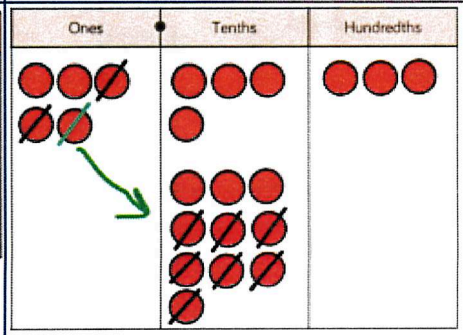
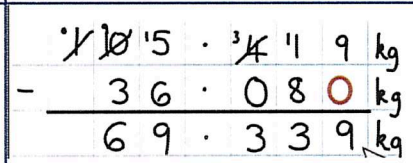
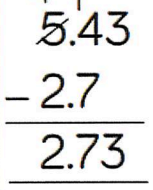
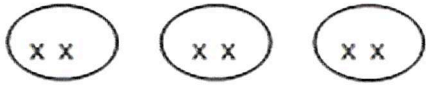
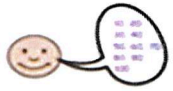
Y3 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Column subtraction without exchanging	Use base 10 or Numicon to model. 47—32 	Draw representations to support understanding. 	$47-24=23$ $40+7$ $-\ 20+4$ $20+3$ Intermediate step may be needed to lead to clear subtraction under- standing. 
Column subtraction with exchanging	Begin with base 10 or Numicon. Move to PV counters, modelling the exchange of a ten into ten ones. Use exchanging terminology. 	Children may draw base ten or PV counters and cross off. 	Begin by partitioning into PV columns.  Then move to formal method. 

Y4-6 SUBTRACTION

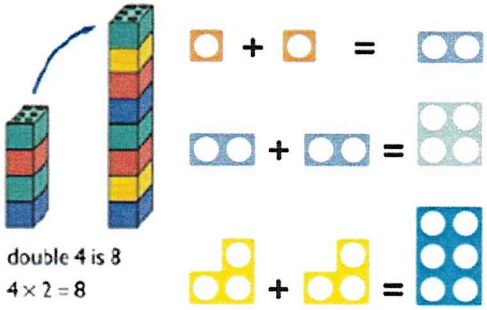
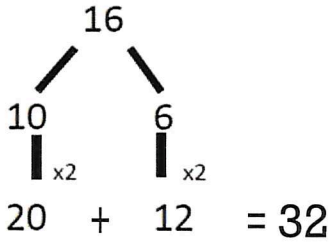
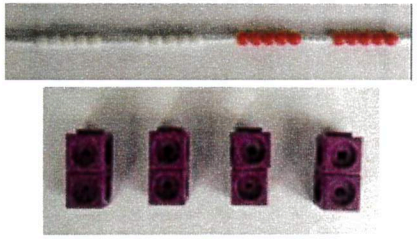
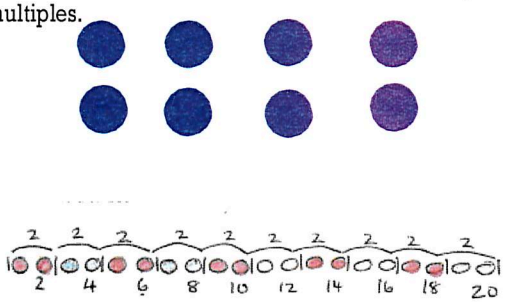
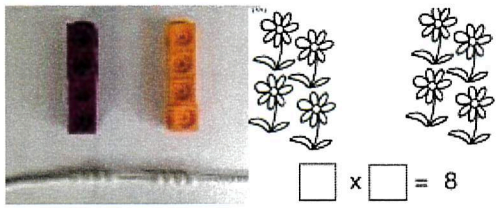
Objective & Strategy	Concrete	Pictorial	Abstract
Y4 Subtract with up to 4 digits *Introduce decimal subtraction through context of money*	Model process of exchange using Numicon, base ten and then move to PV counters. 	Children to draw PV counters and show their exchange—see Y3. 	
Y5 Subtract numbers with more than 4 digits and subtract decimals with up to 3 decimal places.	Model process of exchange using Numicon, base ten and then move to PV counters. 		  Use zeros for place- holders. 
Y6 Subtract numbers with more than 4 digits and subtract decimals with up to 3 decimal places.			 

Multiplication – EYFS

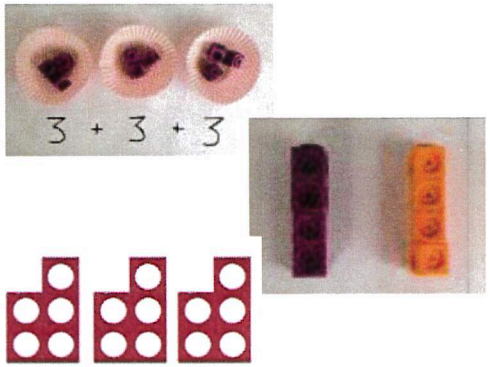
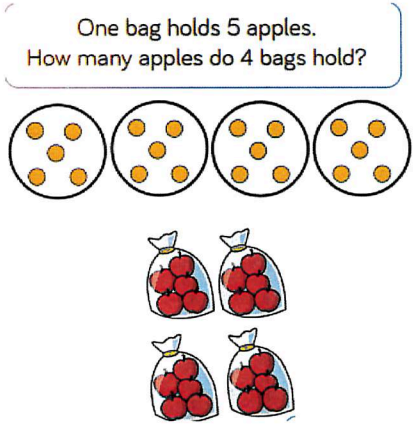
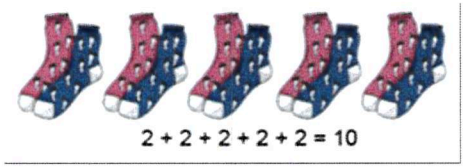
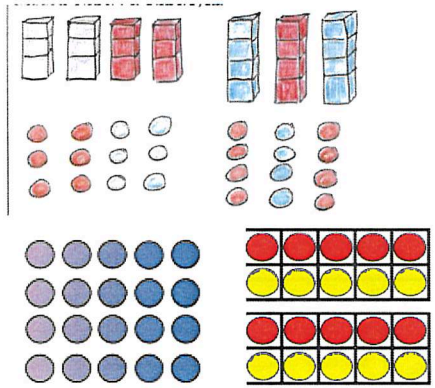
GUIDANCE / MODELS AND IMAGES	KEY VOCABULARY
The link between addition and multiplication can be introduced through doubling. If available, Numicon is used to visualise the repeated adding of the same number. These can then be drawn around or printed as a way of recording. Children begin with mostly pictorial representations:   How many groups of 2 are there? Real life contexts and use of practical equipment to <u>count in repeated groups of the same size</u>:   How many wheels are there altogether? How much money do I have? Count in twos; fives; tens both aloud and with  objects Children are <u>given multiplication problems set in a real life context</u>. Children are encouraged to visualise the problem. How many fingers on two hands? How many sides on three triangles? How many legs on four ducks? Children are encouraged to read number sentences aloud in different ways "five times two makes ten" "ten is equal to five multiplied by two"	lots of groups of times multiply multiplied by multiple of once, twice, three times... ten times... ...times as (big, long, wide... and so on) repeated addition double

Vocabulary introduced in N: groups of, double, odd/even, pairs

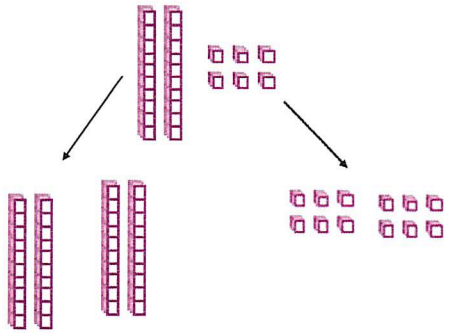
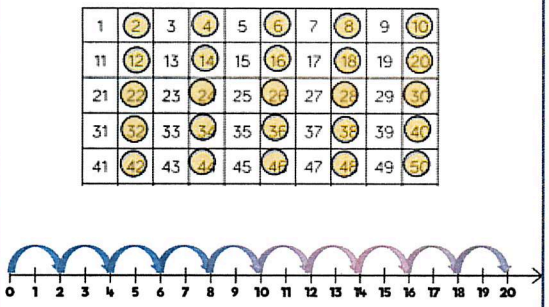
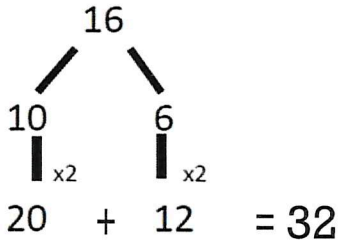
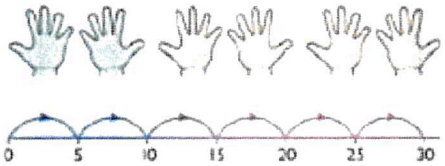
Y1 MULTIPLICATION

Objective &Strategy	Concrete	Pictorial	Abstract
Doubling	Use practical activities using manipulatives including cubes and Numicon to demonstrate doubling. 	Draw pictures to show how to double numbers. Double 4 is 8 	Partition a number and then double each part before recombining it back together. 
Counting in multiples	Count the groups as children are skip counting, children may use their fingers as they are skip counting. 	Children make representations to show counting in multiples. 	Count in multiples of a number aloud. Write sequences with multiples of numbers. 2, 4, 6, 8, 10 5, 10, 15, 20, 25, 30
Making equal groups and counting the total	Use manipulatives to create equal groups. 	Draw and make representations Draw  to show 2 x 3 = 6	2 x 4 = 8

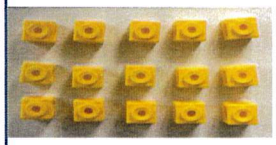
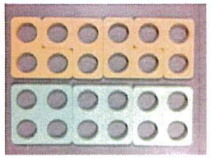
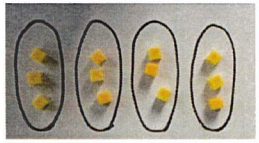
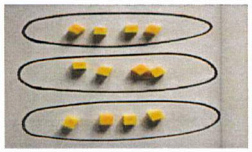
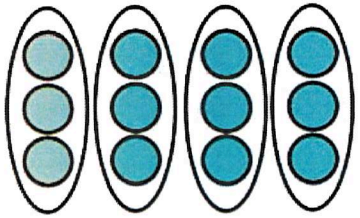
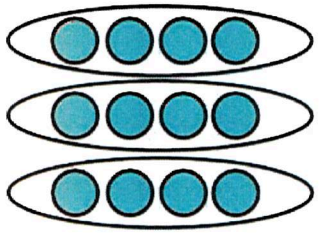
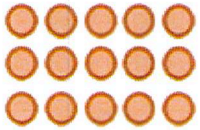
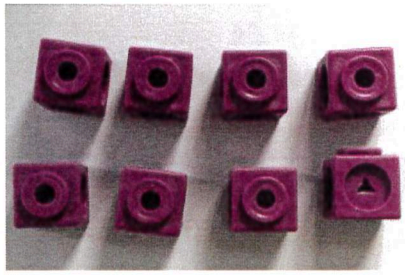
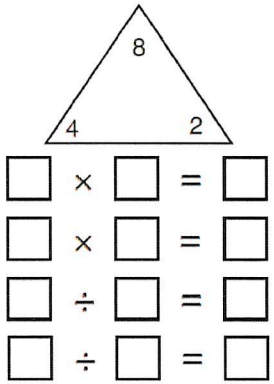
Y1 MULTIPLICATION

Objective &Strategy	Concrete	Pictorial	Abstract
Repeated addition	Use different objects to add equal groups. 	Use pictorial including number lines to solve problems. 	Write addition sentences to describe objects and pictures. 
Understanding arrays	Use objects laid out in arrays to find the answers to 2 lots 5, 3 lots of 2 etc. 	Draw representations of arrays to show understanding. 	$5 + 5 + 5 + 5 = 20$ Pupils are introduced to the multiplication symbol in Year 2.

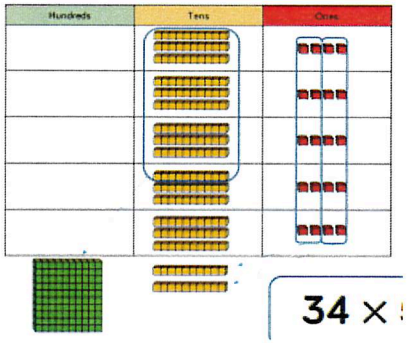
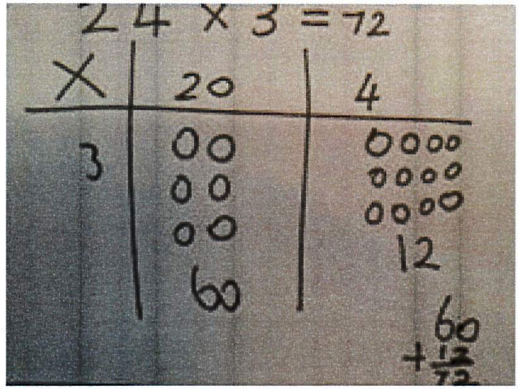
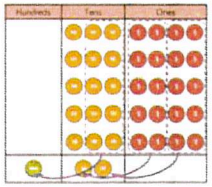
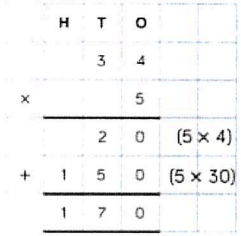
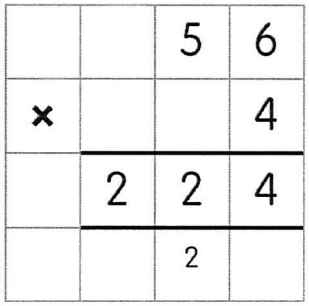
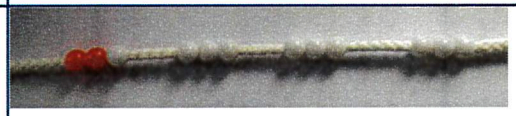
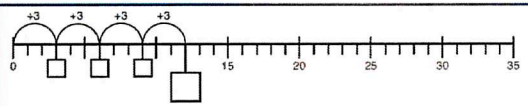
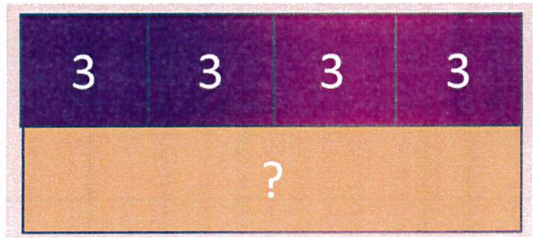
Y2 MULTIPLICATION

Objective & Strategy	Concrete	Pictorial	Abstract
Doubling (Using 2 times table)	Model doubling using dienes and PV counters.  40 + 12 = 52	Draw pictures and representations to show how to double numbers using understanding of 2 times tables.  	Partition a number and then double each part before recombining it back together.  20 + 12 = 32
Counting in multiples of 2, 5, 10 from 0 (times tables)	Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models.  5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 40	Number lines, counting sticks and bar models should be used to show representation of counting in multiples. 	Count in multiples of a number aloud. Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 5, 10, 15, 20, 25, 30

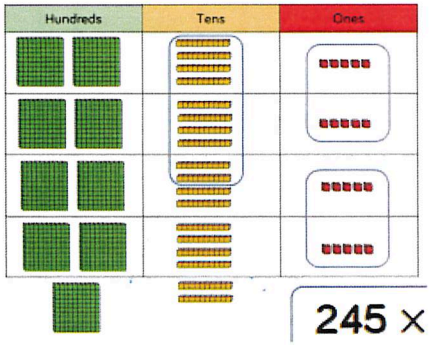
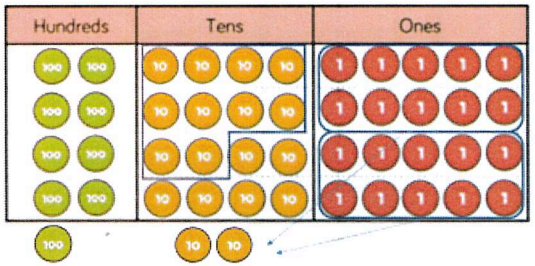
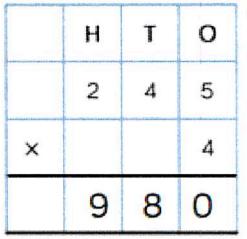
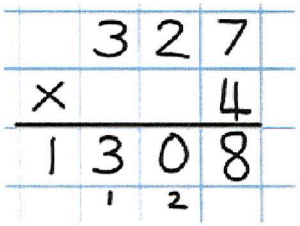
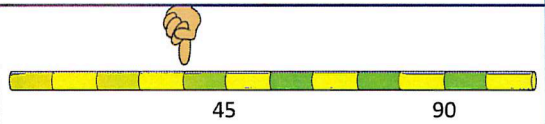
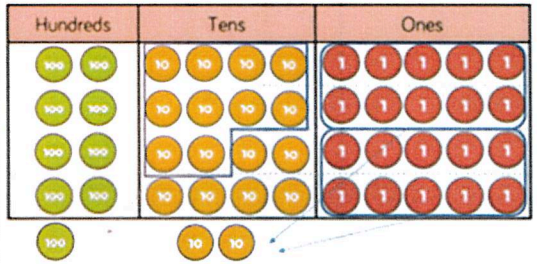
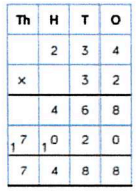
Y2 MULTIPLICATION

Objective & Strategy	Concrete	Pictorial	Abstract
Multiplication is commutative	Create arrays using counters and cubes and Numicon.    Pupils should understand that an array can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.  	Use representations of arrays to show different calculations and explore commutativity.  	$12 = 3 \times 4$ $12 = 4 \times 3$ Use an array to write multiplication sentences and reinforce repeated addition.  $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ $5 \times 3 = 15$ $3 \times 5 = 15$
Using the Inverse *This should be taught alongside division, so pupils learn how they work alongside each other.*		Fact Families 	Show all 8 related fact family sentences. $2 \times 4 = 8$ $4 \times 2 = 8$ $8 \div 2 = 4$ $8 \div 4 = 2$ $8 = 2 \times 4$ $8 = 4 \times 2$ $2 = 8 \div 4$ $4 = 8 \div 2$

Y3 MULTIPLICATION

Objective & Strategy	Concrete	Pictorial	Abstract
Expanded method leading to formal 2 by 1 multiplication.	Use knowledge of arrays to support understanding of multiplication. 	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.  34 x 5 = 170 	Use the expanded method to demonstrate multiplying by ones and tens. Use of place holder to highlight multiplying by ten.  
Count in multiples of 3, 4 and 8 (timestables)	 	 	4 × 3 = ☐ 0, 3, 6, 9, 12, 15

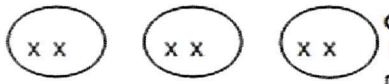
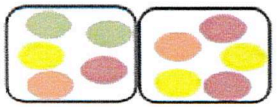
Y4-5 MULTIPLICATION

Objective & Strategy	Concrete	Pictorial	Abstract
Column multiplication (compact method) Y4 Multiply 2 and 3-digit numbers by 1-digit numbers	Children can continue to be supported by Base 10 or place value counters at the stage of multiplication. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers. 	Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods. 	 
Y4 Multiples of 6, 7, 9, 11 and 12 (timestables)			0, 6, 12, 18, 24... 9 18 36 54 63 90 108
Y5 Multiply 4 digit by 2 digit numbers. Multiply decimals by 10,100 and 1000	Manipulatives may still be used with the corresponding long multiplication modelled alongside. 		 | | × 10 | × 100 | × 1000 | |---|---|---|---| | 4.02 | 40.2 | 402 | 4020 | | 0.045 | 0.45 | 4.5 | 45 | | 34.094 | 340.94 | 3409.4 | 34 094 | | 209.817 | 2098.17 | 20 981.7 | 209 817 | | 0.006 | 0.06 | 0.6 | 6 |

Y6 MULTIPLICATION

Objective & Strategy	Concrete	Pictorial	Abstract
Multiplying 4-digit numbers by 2-digit numbers including decimals up to 2 decimal places.	N/A If pupils are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method.	N/A When multiplying children should be confident in using the formal written method.	Remind children that the single digit belongs in the units column. Line up the decimal points in the question and the answer. 3 · 1 9 × 8 2 5 · 5 2 1 7 TTh Th H T O 2 7 3 9 × 2 8 2 1 9 1 2 2 5 3 7 5 4 7 8 0 1 1 7 6 6 9 2 1

Division – EYFS

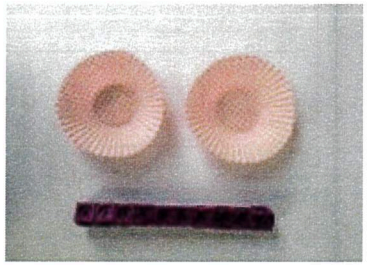
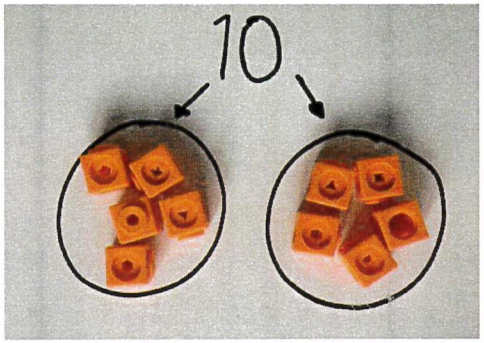
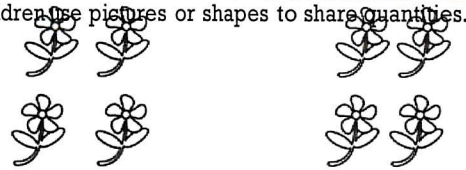
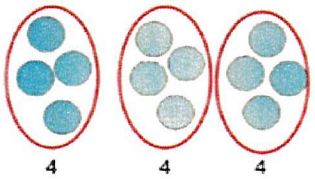
Guidance/models and images	Key vocabulary
Children need to see and hear representations of division as both grouping and sharing. Division can be introduced through halving. Children begin with mostly pictorial representations linked to real life contexts:  **Grouping model** Mum has 6 socks. She grouped them into pairs – how many pairs did she make?  **Sharing model** I have 10 sweets. I want to share them with my friend. How many will we have each?	Halve R Share, share equally N/R One each, two each, three each…. R Group in pairs, threes…..R Tens R Equal groups of R Left, left over R Odd/even R The following vocabulary may be introduced towards the end of R: Divide Divide by Divide into

For division introduced through halving, Digging Deeper activity is also used. R

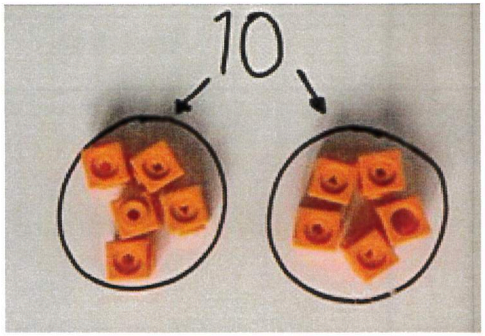
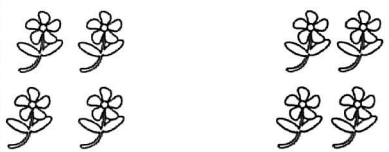
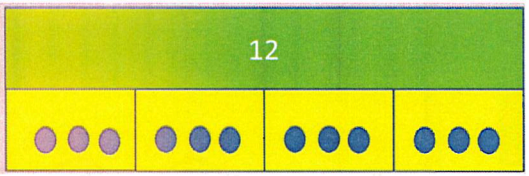
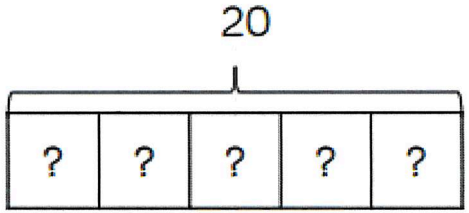
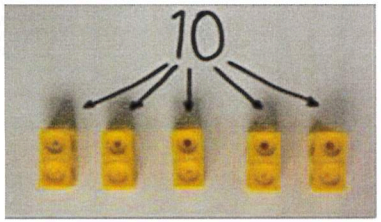
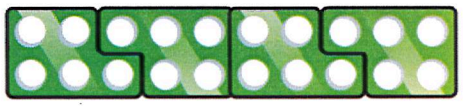
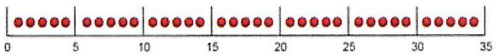
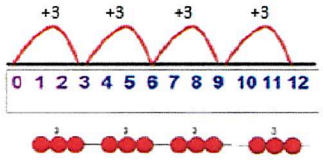
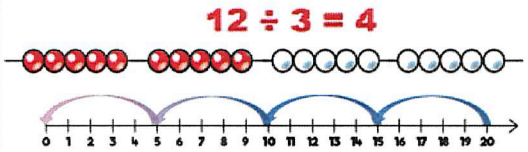
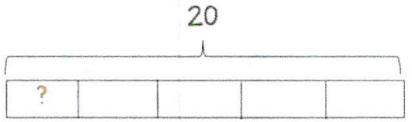
For the Grouping model, children can be questioned – Can you put 3 crackers on each plate? Can you put buttons into groups of 2? R

For the Sharing model, children can be questioned – Can you share the cakes with the 3 bears? R

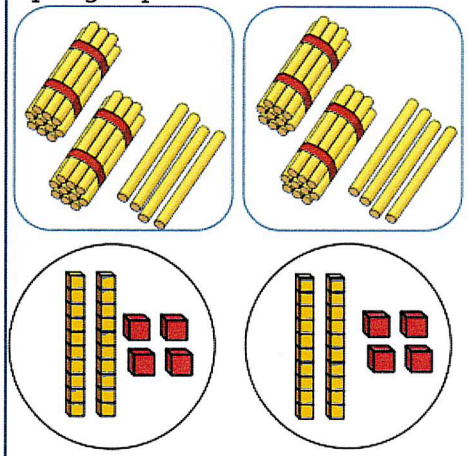
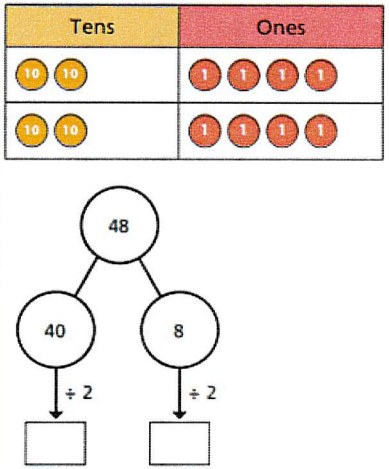
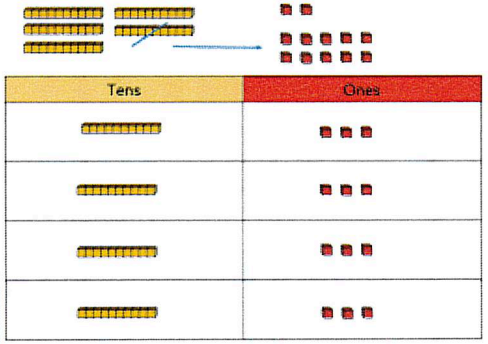
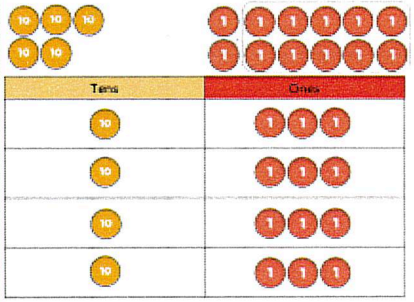
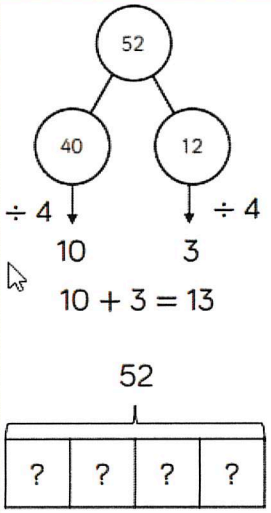
Y1 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Division as sharing	   I have 10 cubes, can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  8 shared between 2 is 4 Sharing:  12 shared between 3 is 4	Year 1 are not expected to record division formally. 12 shared between 3 is 4

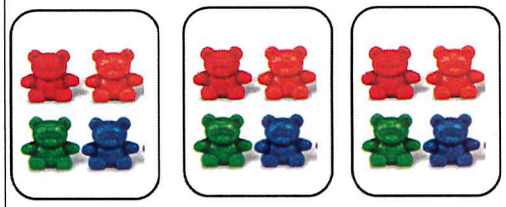
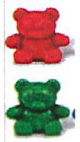
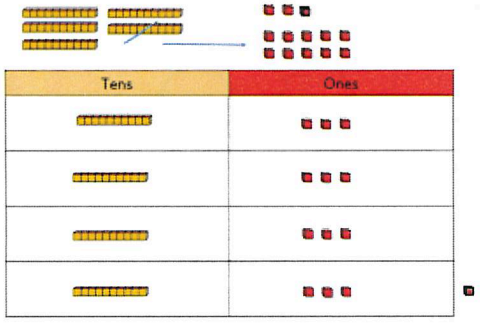
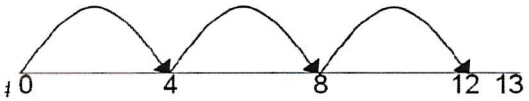
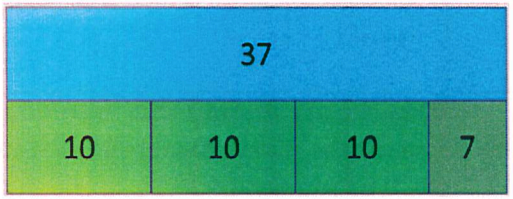
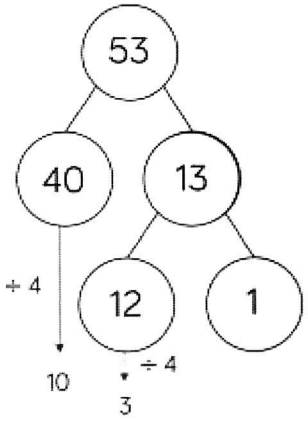
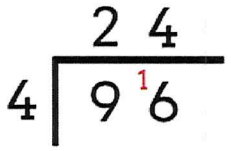
Y2 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Division as sharing	 I have 10 cubes; can you share them equally in 2 groups?	Children use pictures or shapes to share quantities.  8 ÷ 2 = 4 Children use bar modelling to show and support understanding.  12 ÷ 3 = 4	Year 2 are introduced to the division symbol.  20 ÷ 5 = 4
Division as grouping	Divide quantities into equal groups. Use cubes, counters, objects or place value counters to aid understanding.   	Use number lines for grouping.  	Think of the bar as a whole. Split it into the number of groups you are dividing by and work out how many would be within each group.  20 ÷ 5 = ? 5 x ? = 20 28 ÷ 7 = 4 Divide 28 into 7 groups. How many are in each group?

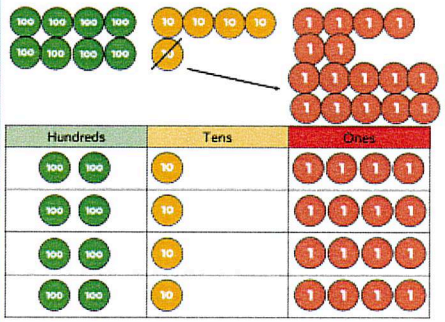
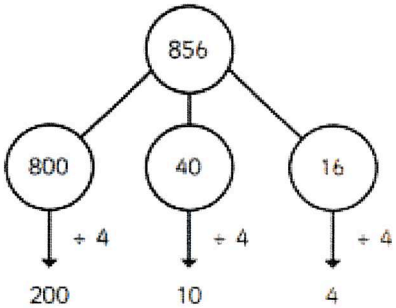
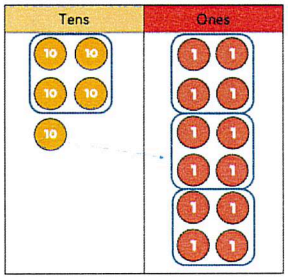
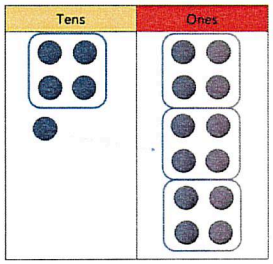
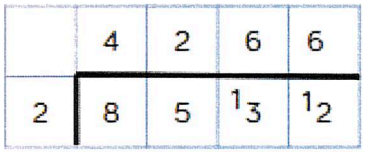
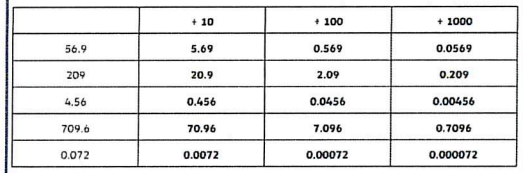
Y3 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Divide 2-digits by 1-digit (sharing with no exchange)	Children can use manipulatives that allow them to partition into tens and ones. Straws, Base 10 and place value counters can all be used to share numbers into equal groups. 	Part-whole models can provide children with a clear written method that matches the concrete representation. 	$48 \div 2 = 24$
Divide 2-digits by 1-digit (sharing with exchange)	When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones. 	Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows. 	

Y3 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Division with remainders (using the bus stop method)	Divide objects between groups and see how much is left over. When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones. 14 ÷ 3 =   	Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.  Draw dots and group them to divide an amount and clearly show a remainder.  Use bar models to show division with remainders.  Use part-whole models. 	Complete written divisions and show the remainder using r.  **53 ÷ 4 = 13 r1** 96 ÷ 4 = 24 

Y4-5 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Y4 Divide at least 3-digit numbers by 1 digit Sharing/grouping			Begin with divisions that divide equally with no remainder. 2 1 8 3 4 | 8 7 2 Move onto divisions with a remainder. 8 6 r 2 3 5 | 4 3 2
Y5 Short Division with 1 digit Divide decimals by 10, 100 and 1000	When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor. 	Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?' 	Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.  

Y6 DIVISION

Objective & Strategy	Concrete	Pictorial	Abstract
Divide multi digits by 2 digits (Short division)	When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective.	N/A	Children can write out multiples to support their calculations with larger remainders. 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 0 4 8 9 15 | 7 | 7_3 | 13_3 | 13_5 Finally move into decimal places to divide the total accurately. 1 4 . 6 16 21 3 5 | 5 1 1 . 0
Divide multi digits by 2 digits with remainders (Long division)	As above	When a remainder is left at the end of a calculation, children can either leave it as a remainder or convert it to a fraction. This will depend on the context of the question.	2 4 $\frac{4}{5}$ 1 5 | 3 7 2 – 3 0 0 7 2 – 6 0 1 2 2 4 r 1 2 1 5 | 3 7 2 – 3 0 0 7 2 – 6 0 1 2 1 × 15 = 15 2 × 15 = 30 3 × 15 = 45 4 × 15 = 60 5 × 15 = 75 10 × 15 = 150