

BERKSWELL CE PRIMARY SCHOOL

Calculation Policy 2022 – EYFS and Key Stage 1

Our Calculation Policy shows the progression of maths teaching from year to year, for the four operations: addition, subtraction, multiplication and division. It enables both teachers and parents a clear understanding of how the operations are taught sequentially through the year groups. Included in this policy are illustrations of how the teaching of calculations are modelled by teachers and how concepts are taught through a process of concrete demonstration and pictorial representations, before moving on to the abstract calculation.

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

Progression within each area of calculation is in line with the programme of study in the 2014 National Curriculum and the EYFS 2021 Framework.

ADDITION – EYFS

Skills and Objectives

Use language of 'more than'.

Sing number songs and rhymes.

Count, including subitising and add 1 more.

Use resources such as Numberblocks, Numicon and Tens frames to combine amounts.

Sort and count people and objects into parts, to understand the 'part, part whole' relationship.

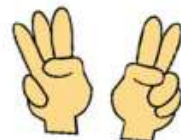
Use and understand a part-whole model.

Use a number line to find one more or link with counting on.

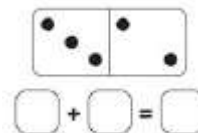
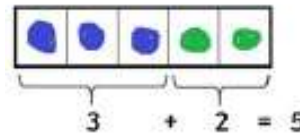
Find and know number bonds.

Strategies and Methods

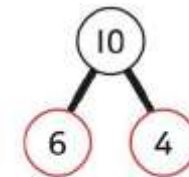
Concrete



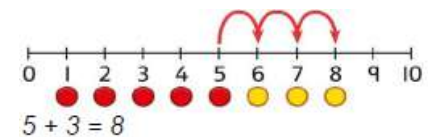
Pictorial






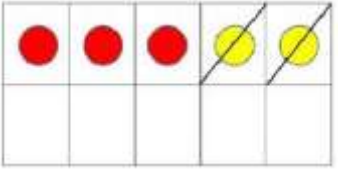
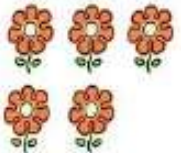
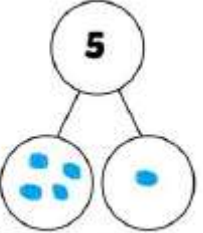

Abstract



$$\boxed{6} + \boxed{4} = \boxed{10}$$



SUBTRACTION – EYFS

Skills and Objectives	Strategies and Methods		
<p>Use language of 'fewer than'.</p> <p>Sing number songs and rhymes.</p> <p>Take away objects and count how many are left.</p> <p>Find 1 less.</p> <p>Draw and cross out pictures to subtract.</p> <p>Counting back on a number line.</p> <p>Separating a 'whole' into parts.</p> <p>Subtract within 10.</p> <p>Subtract using know number bonds.</p>	<p>Concrete</p>   	<p>Pictorial</p>   <p>5 - 3 =</p>  <p>5 - 4 = 1</p>	<p>Abstract</p>  <p>9 - 3 = 6</p> <p>5 - 3 = 2</p>

MULTIPLICATION – EYFS

Skills and Objectives

Strategies and Methods

Grouping

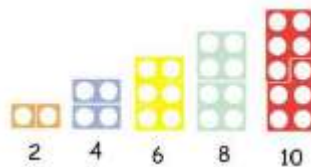
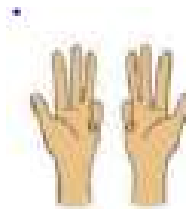
Making equal groups from a whole.

Represent a whole and work out how many equal groups.

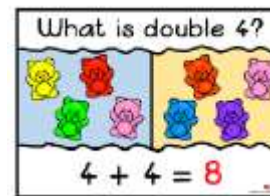
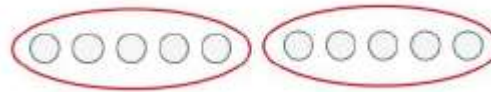
Sort objects and people into equal groups.

Find doubles.

Concrete



Pictorial



Abstract

$1+1=$

$2+2=$

$3+3=$

$4+4=$

$5+5=$

DIVISION – EYFS

Skills and Objectives

Strategies and Methods

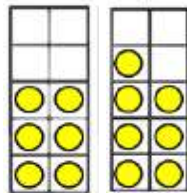
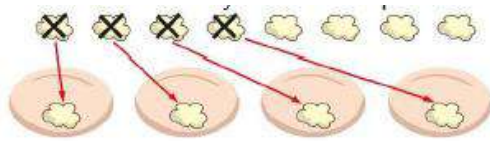
Sharing

Share a set of objects into equal parts and work out how many are in each part.

Find halves.

Odd and even numbers.

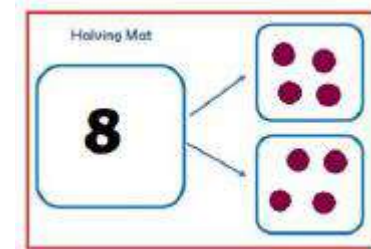
Concrete



Pictorial



Abstract



ADDITION – Year 1

Skills and Objectives

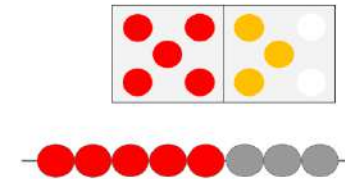
Represent and use number bonds and related subtraction facts within 20.

Add one-digit numbers to 20, including zero.

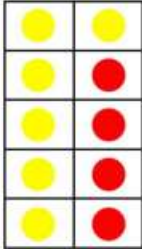
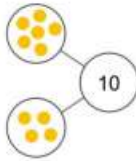
A combination of 10's frames, bar models, rekenrek and bead strings will be used to support addition skills.

Strategies and Methods

Images from NCETM- mastering number/ MathsHub



Rekenrek- The rekenreks will also develop the children's fluency and ability to calculate efficiently.

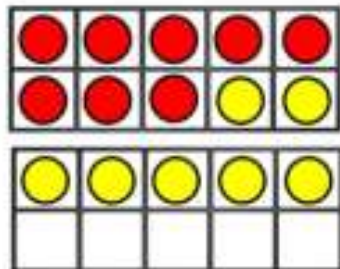
 <p>6 + 4 = 10 4 + 6 = 10 10 - 4 = 6 10 - 6 = 4</p> <p>Tens Frame</p>	 <p>6 + 4 = 10 4 + 6 = 10 10 - 4 = 6 10 - 6 = 4</p> <p>Part Whole Model</p>	<table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr><td colspan="2" style="text-align: center;">10</td></tr> <tr><td style="width: 50%;">6</td><td style="width: 50%;">4</td></tr> </table> <p>6 + 4 = 10 4 + 6 = 10 10 - 4 = 6 10 - 6 = 4</p> <p>Bar Model</p>	10		6	4
10						
6	4					



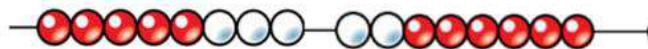
4 + 3 = 7



Add two-digit numbers to 20, including zero.



$$10 + 5 = 15$$



$$10 + 10 = 20$$

SUBTRACTION – Year 1

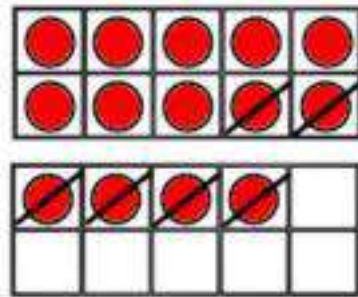
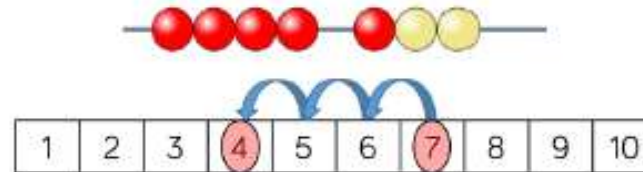
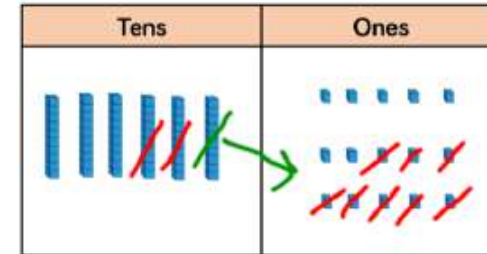
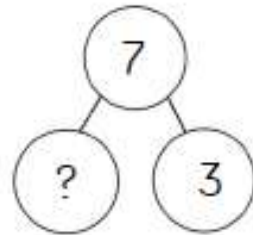
Skills and Objectives

Subtract one-digit numbers to 20, including zero.

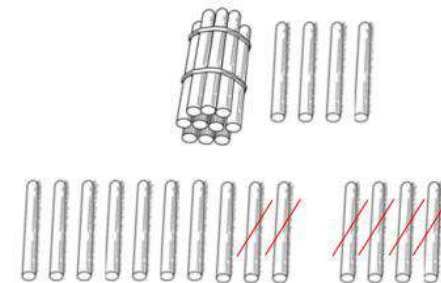
Subtract two-digit numbers to 20, including zero.

A combination of 10's frames, bar models, rekenrek and bead strings will be used to support subtraction skills.

Strategies and Methods



$$14 - 6 = 8$$

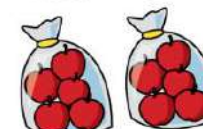
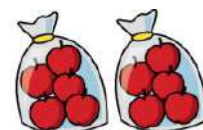
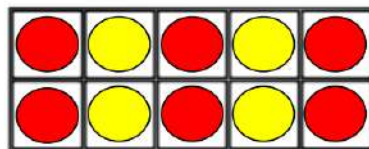


MULTIPLICATION – Year 1

Skills and Objectives

Strategies and Methods

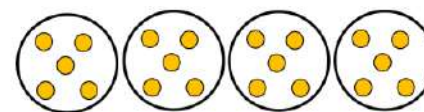
Count in two's, five and tens.



Solve one-step multiplication problems by calculating the answer using objects, pictures and arrays.



Three equal groups of 5

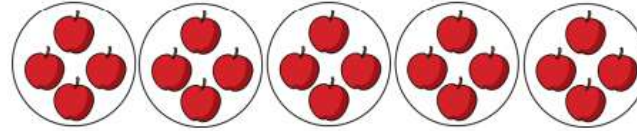


DIVISION – Year 1

Skills and Objectives

Strategies and Methods

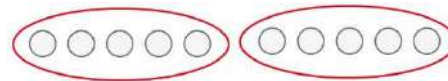
Solve one-step division problems by calculating the answer using objects, pictures and arrays.



20 apples shared between 5 people. How many do they have each?



*There are 10 children altogether.
There are 2 in each group.
There are 5 groups.*



*There are 10 in total.
There are 5 in each group.
There are 2 groups.*

ADDITION – Year 2

Skills and Objectives

Recall and use addition facts to 20 fluently, and derive and use related facts up to 100

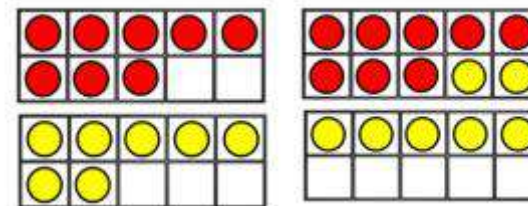
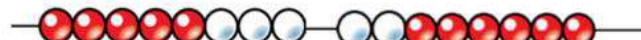
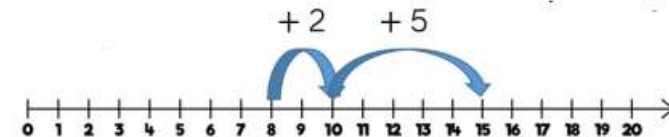
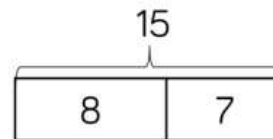
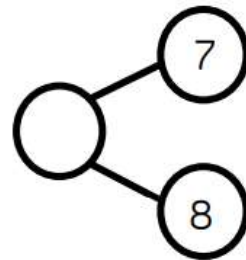
Strategies and Methods



Rekenrek- The rekenreks will also develop the children's **fluency** and ability to calculate efficiently.

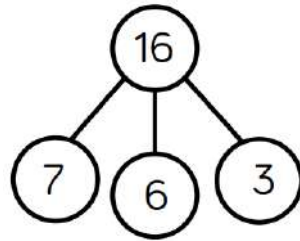


$$8 + 7 = 15$$

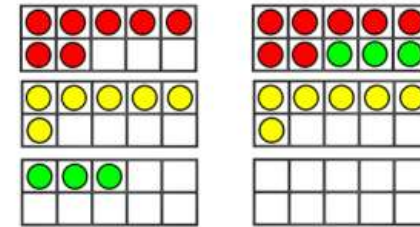


Add three 1-digit numbers

Look for number bonds to 10 or doubles to add more efficiently.



$$7 + 6 + 3 = 16$$

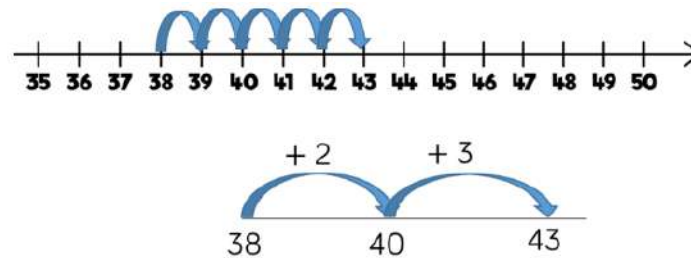


Add 1-digit and 2-digit numbers to 100.

Count on from the larger number- first in ones/ units and then in tens.

They should apply their knowledge of number bonds to add more efficiently. E.g. $8+5=13$ so $38+5=43$

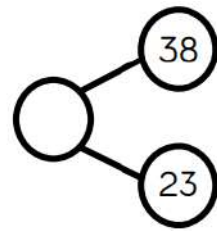
$$38 + 5 = 43$$



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Add two 2 digit numbers to 100

Partition both numbers into tens and units, add the tens, then add the ones.



$$38 + 23 = 61$$

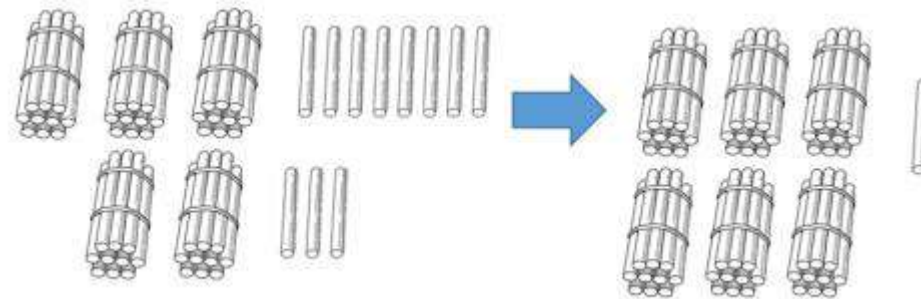
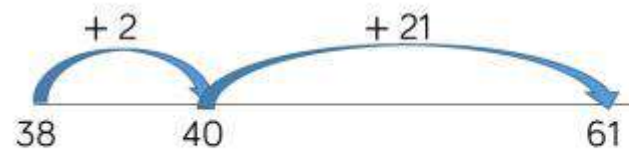
TU + TU

$$36 + 23$$

T $30 + 20 = 50$

U $6 + 3 = 9$

$$50 + 9 = 59$$



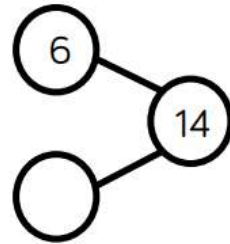
SUBTRACTION – Year 2

Skills and Objectives

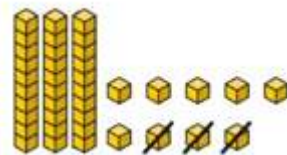
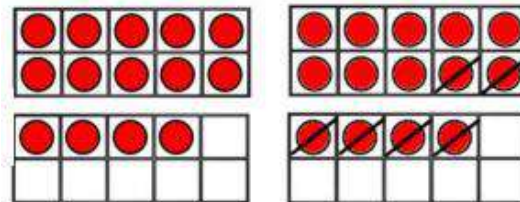
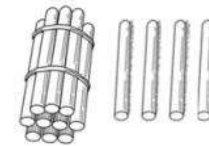
Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100

Subtract 1 and 2-digit numbers to 100.

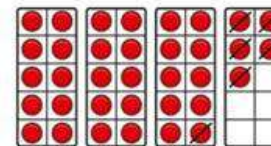
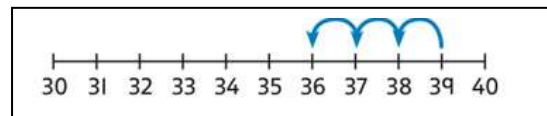
Strategies and Methods



$$14 - 6 = 8$$



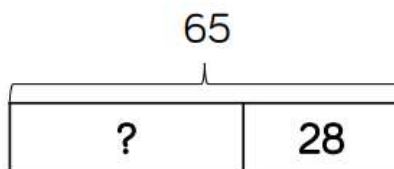
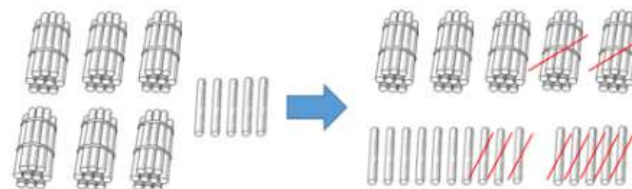
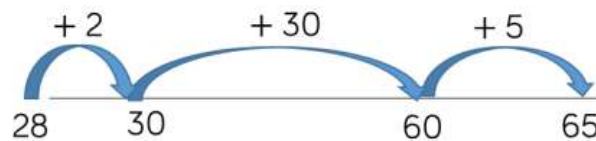
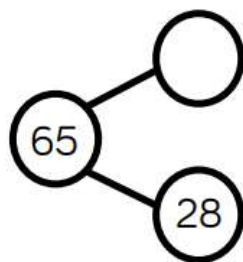
$$39 - 3 = 36$$



$$35 - 6$$

First, I will subtract 5, then 1.

Subtract two 2-digit numbers to 100.



$$65 - 28 = 37$$

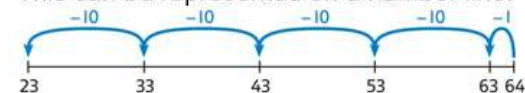
Subtract the 10s and the 1s.

This can be represented on a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Subtract the 10s and the 1s.

This can be represented on a number line.

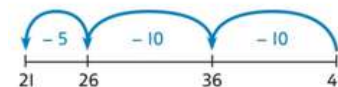


$$64 - 41 = ?$$

$$64 - 1 = 63$$

$$63 - 40 = 23$$

$$64 - 41 = 23$$



MULTIPLICATION – Year 2

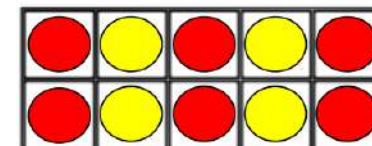
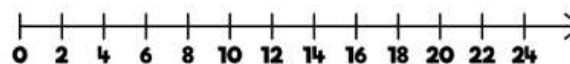
Skills and Objectives

Strategies and Methods

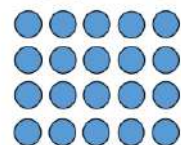
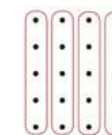
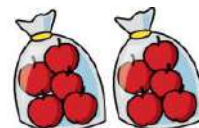
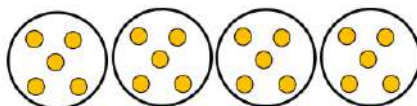
Recall and use multiplication and division facts for 2, 5 and 10 times table.



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50



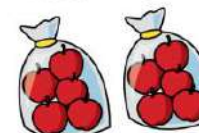
Solve 1-step problems using multiplication.



$$5 + 5 + 5 + 5 = 20$$

$$4 \times 5 = 20$$

$$5 \times 4 = 20$$



$$4 + 4 + 4 + 4 + 4 = 20$$

$$5 + 5 + 5 + 5 = 20$$

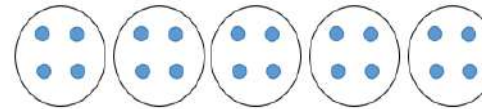
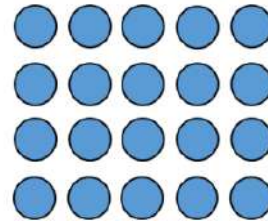
$$4 \times 5 = 20 \text{ and } 5 \times 4 = 20$$

DIVISION – Year 2

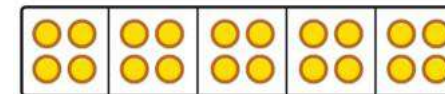
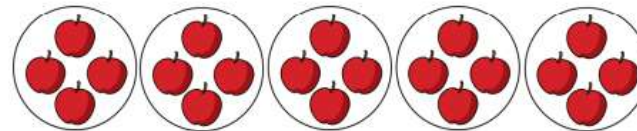
Skills and Objectives

Strategies and Methods

Solve one-step problems with division. (Sharing)

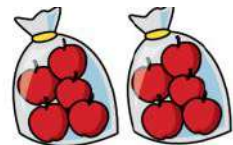


$$20 \div 5 = 4$$

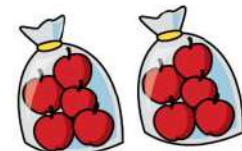


*20 shared into 5 equal parts.
There are 4 in each part.*

Solve one-step problems with division. (Grouping)



*8 divided into 4 equal groups.
There are 2 in each group.*



$$12 \div 3 = 4$$



$$12 \div 4 = 3$$



$$12 \div 6 = 2$$



$$12 \div 2 = 6$$

