

HOLGATE PRIMARY & NURSERY SCHOOL



A guide for parents on written
calculations in mathematics

Year 2

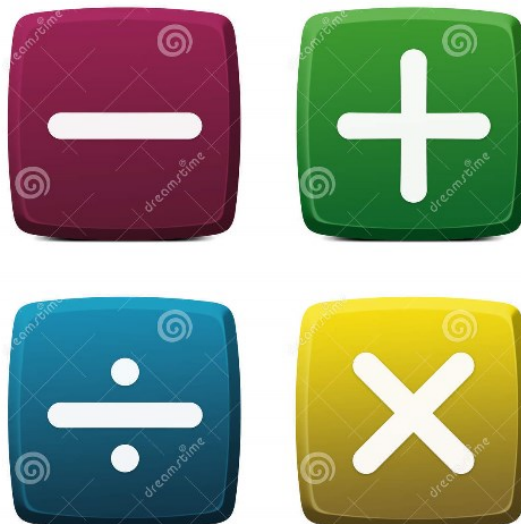
This booklet is designed to support parents understand the strategies/methods used in school when teaching children a formal written method to solve a problem. It shows the progression in calculation strategies for each of the four operations: addition, subtraction, multiplication and division. For each operation there are stages that children need to work through and build upon their basic skills.

These are the calculations that you child will do in year 2. These stages are progressive and will be built upon throughout the academic year. Children will work through these stages at different paces to ensure that they are confident and can apply them independently.

For children to develop a good sense of number, it is important to lay firm foundations in mathematics and to build on these in a systematic way.

At Holgate Primary we have taken into account the way children develop in their learning and understanding, beginning with a firm grounding in mental calculations, and using these skills to develop effective written methods for calculations.

We have provided a copy of the multiplication facts relevant to year 2 at the back of this booklet. These should be learnt by the end of year 2 and children need to become fluent and able to recall these quickly. Times tables are one of the basic skills needed to develop understanding of mathematics. The new curriculum states that all children by the end of year 4 should know all of their times tables (up to 12×12).



Addition

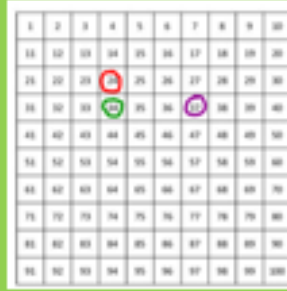
Stage 1

Counting on using a hundred square (tens). $24 + 10$



Stage 2

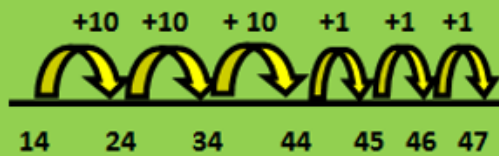
Counting on using a hundred square (tens and units). $24 + 13$



Stage 3

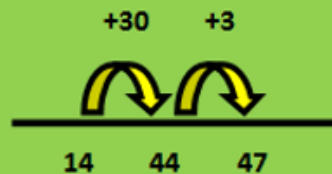
Using a number line with jumps in 10s (T) and 1s (U).

$$14 + 33 = 47$$



Stage 4

Using a number line with partitioning $14 + 33 = 47$



Stage 5

Move towards partitioned column method.

$$23 + 43$$

$$20 + 3$$

$$\underline{40 + 3}$$

$$60 + 6 = 66$$

Year 2

add
more
plus
and
make
altogether
total
equal to
equals
double
most

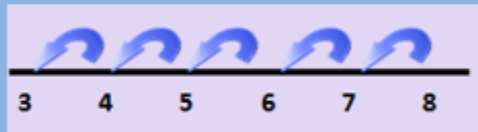
count on
number line
sum
tens
units
partition
addition
column
tens
boundary
inverse

Subtraction

Stage 1

Using a number line to count back.

$$8 - 5 = 3$$



Stage 2

Using a hundred square to take away 1s.

$$72 - 5$$

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

Stage 3

Using a hundred square to take away 10s.

$$72 - 20$$

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

Stage 4

Using a hundred square to take away 10s and 1s starting with 1s.

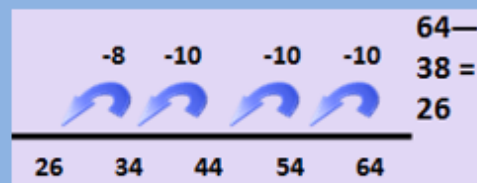
$$72 - 25$$

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

Stage 5

Using a number line to find the difference between numbers

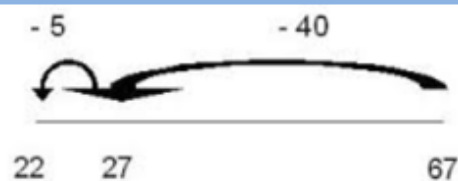
$$64 - 38$$



Stage 6

Using a number line to find the difference between numbers.

$$67 - 45 = 22$$



Year 2

equal to
take away
less
minus
subtract
distance
between
how many
more

how many
fewer
less than
most least
count back
how many
left
how much
less is
difference
count on

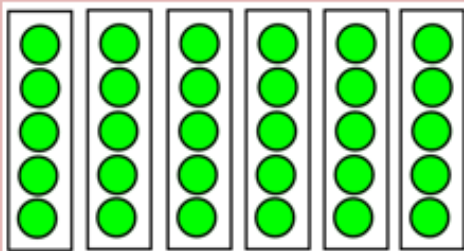
Multiplication

Stage 1

Repeated addition using concrete objects

$$6 \times 5 = 30$$

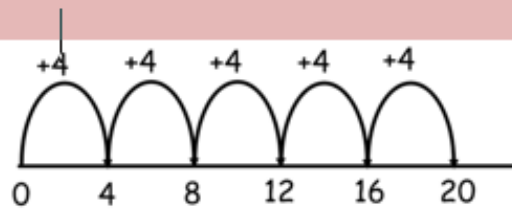
$$5 + 5 + 5 + 5 + 5 + 5 = 30$$



Stage 2

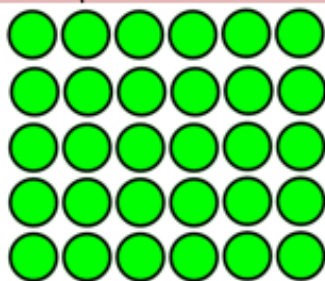
Use repeated addition on a number line.

$$5 \times 4 = 20$$



Stage 3

Use arrays to show the commutative law of multiplication.



$$6 \times 5 = 30$$

$$5 \times 6 = 30$$

Year 2

groups of
lots of times
array
altogether
multiply
count
multiplied by
repeated
addition

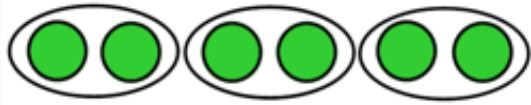
column
row
sets of
commutative
equal groups
times
as big as
once twice
three times

Division

Stage 1

Grouping numbers using counters (\div)

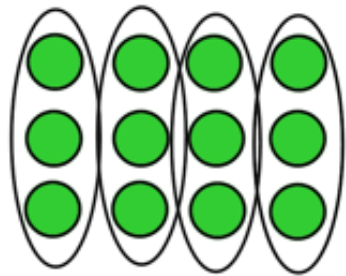
$$6 \div 2 = 3$$



Stage 2

Using arrays to work out division questions.

$$12 \div 3$$



Stage 3

Using known multiplication facts to work out the inverse.

$$4 \times 10 = 40 \text{ therefore}$$

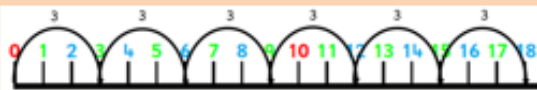
$$40 \div 10 = 4 \text{ and}$$

$$40 \div 4 = 10$$

Stage 4

Chunking on a number line.

$$18 \div 3 = 6$$



Year 2

share
share equally
one each
two each...
group
groups of
equal groups
of
lots of
array
divide

divided by
divided into
division
grouping
number line
left
left over

Multiplication Facts

2 times tables	5 times tables	10 times table
$1 \times 2 = 2$	$1 \times 5 = 5$	$1 \times 10 = 10$
$2 \times 2 = 4$	$2 \times 5 = 10$	$2 \times 10 = 20$
$3 \times 2 = 6$	$3 \times 5 = 15$	$3 \times 10 = 30$
$4 \times 2 = 8$	$4 \times 5 = 20$	$4 \times 10 = 40$
$5 \times 2 = 10$	$5 \times 5 = 25$	$5 \times 10 = 50$
$6 \times 2 = 12$	$6 \times 5 = 30$	$6 \times 10 = 60$
$7 \times 2 = 14$	$7 \times 5 = 35$	$7 \times 10 = 70$
$8 \times 2 = 16$	$8 \times 5 = 40$	$8 \times 10 = 80$
$9 \times 2 = 18$	$9 \times 5 = 45$	$9 \times 10 = 90$
$10 \times 2 = 20$	$10 \times 5 = 50$	$10 \times 10 = 100$
$11 \times 2 = 22$	$11 \times 5 = 55$	$11 \times 10 = 110$
$12 \times 2 = 24$	$12 \times 5 = 60$	$12 \times 10 = 120$

