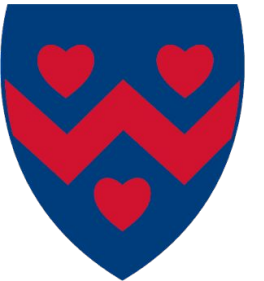# THE ORATORY PREP SCHOOL

Maths Information

Year 3

We will cover

- Scheme of work
- Assessment
- Vocabulary
- Key methods taught & equipment used
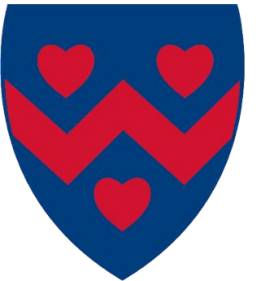- Useful websites and Apps

Scheme of work

As a school we use White Rose Maths as a guide for our maths teaching.

This is then supported by;

- TT Rockstars (for timetables revision)
- MyMaths*
- Mathshed* (part of EdShed hub)
- Mathsbox
- Regular Mental Maths Tests

(*online homework tasks also set on here too)

In Year 3, children revise mathematical topics/methods taught in Year 2 ,as well as being introduced to new methods and concepts, enabling continuous consolidation and progress.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Michaelmas	Place value	Addition and subtraction CAT4 testing (week 2)		Time Am/pm 1/5 minute intervals	2D & 3D shapes	Multiplication and Division Half term assessment		Measure: Length m, cm and mm	Fractions		Money	Data: Pictograms End of term assessment	Christmas themed maths
Lent	Place value	Fractions	Time	Addition and subtraction		Money Half term assessment	Shape - angles	Measure - perimeter	Problem solving		Data: bar charts End of term assessment		
Summer	Time	Multiplication and division		Shape – types of lines	Addition and subtraction		Fractions		Problem solving	End of Year - transition work			

Assessment

- CAT4 test (September) giving us a quantitative reasoning standardised score (thinking and problem solving with numbers).
- PTM (Progress Test in Maths) in May 2023, giving them a standardised score (a score indicating where they stand nationally in Maths, against their age).
- Half termly and End of Term test, written by us, to test their knowledge.

Other

The children will also have a **weekly mental arithmetic test**, which will develop their understanding of vocabulary and application of their class learning within a timed environment.
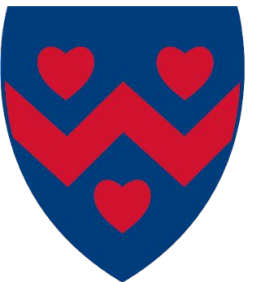
Let's test our knowledge of the vocabulary…

perpendicular	obtuse	array
partition	place value	denominator

Vocabulary

+	**−**	**×**	**÷**	**Other**
Add	Subtract	Multiply	Halve	Hundreds
Addition	Minus	Multiple	Group	Tens
Altogether	Take away	times	share	Ones
Plus	Difference	Double	Divide	Partition
Total	Reduce	Array	Division	Area
Sum of	Less than	Groups	Remainder	Perimeter
Calculate	Fewer	Lots of		2D & 3D shapes
Combined	Left over	Sets of		Numerator
More		Product		Denominator
Commutative (numbers can be added in any order)				
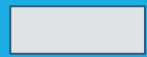
Other: Less than/greater than (obtuse/acute/right)
Perpendicular, parallel, opposite
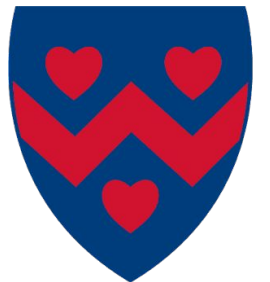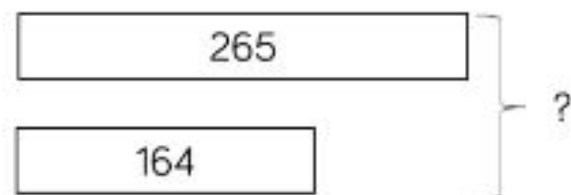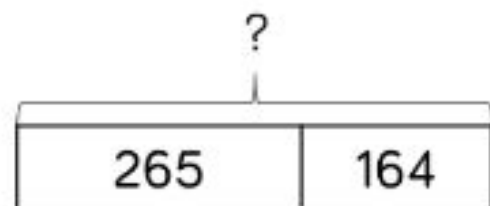Pictogram, Tally chart, Venn diagram
symmetry

Your turn at some of the key methods!
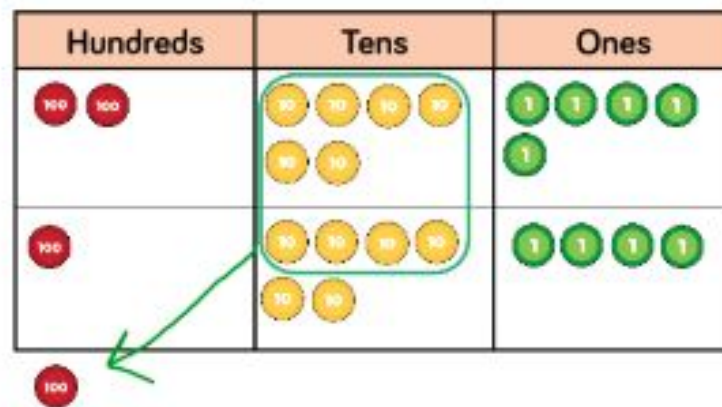
Skill: Add numbers with up to 3 digits	Year: 3

265

?

164

265 | 164

?

265

164

?

265 + 164 = 429

Hundreds	Tens	Ones

265
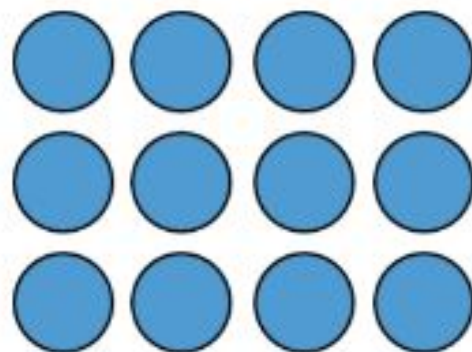+ 164

429
1

Hundreds	Tens	Ones
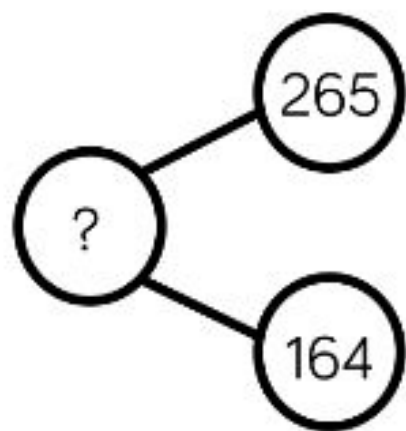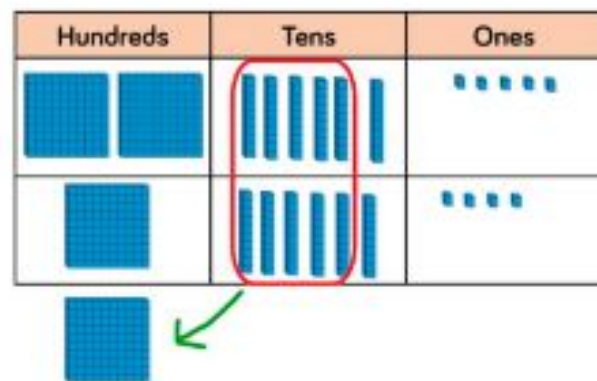
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.
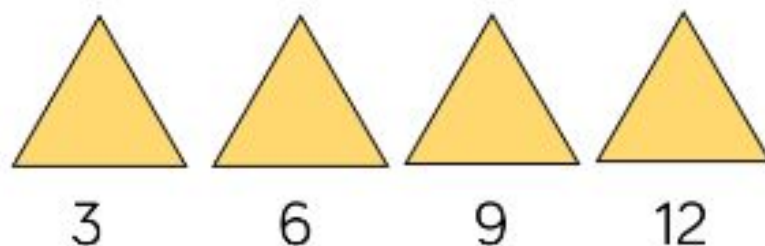
Plain counters on a place value grid can also be used to support learning.

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

3   6   9   12

0   3   6   9   12   15   18   21   24   27   30   33   36

Skill: 3 times table

Year: 3

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the three times table, using concrete manipulatives to support. Notice the odd, even, odd, even pattern using number shapes to support. Highlight the pattern in the ones using a hundred square.
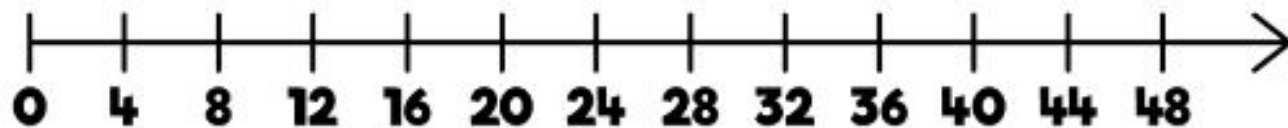
Skill: 4 times table	Year: 3
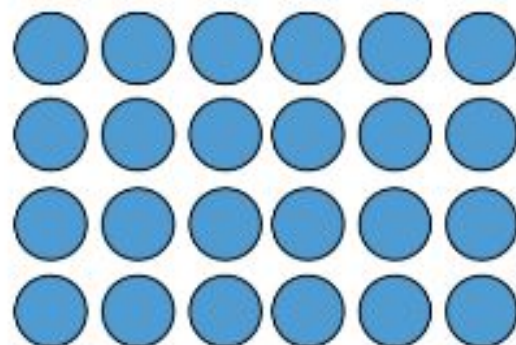
Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the twos. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.
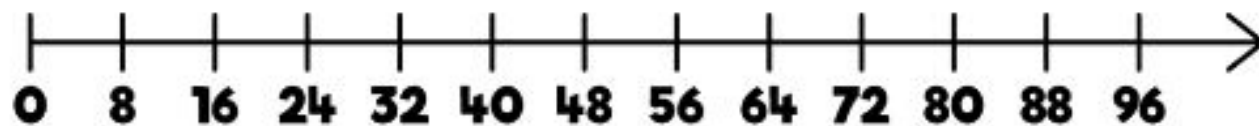
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

4	8	12	16	20
24	28	32	36	40
44	48	52	56	60

4   8   12   16

0   4   8   12   16   20   24   28   32   36   40   44   48

Skill: 8 times table	Year: 3

8   16   24   32

8	16	24	32	40
48	56	64	72	80

| 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

0   8   16   24   32   40   48   56   64   72   80   88   96

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

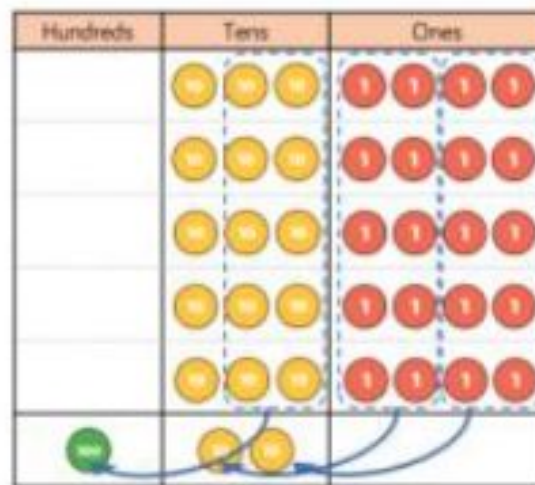| Skill: Multiply 2-digit numbers by 1-digit numbers	Year: 3/4

$$34 \times 5 = 170$$

	H	T	O	
		3	4	
$\times$			5	
		2	0	(5×4)
$+$	1	5	0	(5×30)
	1	7	0	
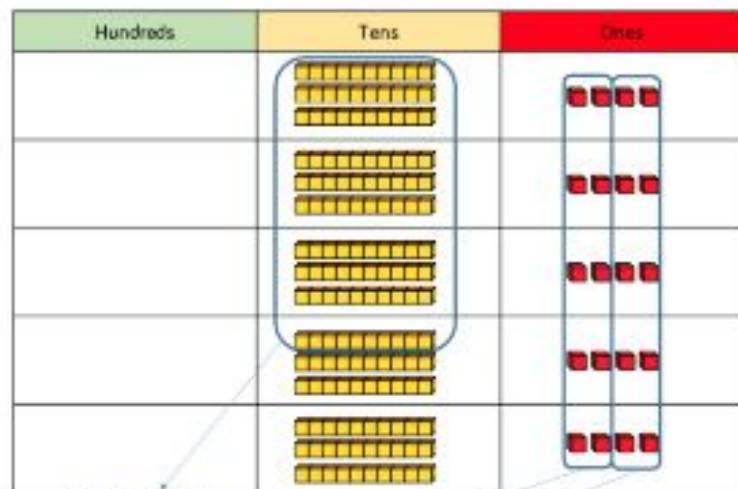
	H	T	O
		3	4
$\times$			5
	1	7	0
	1	2	

Teachers may decide to first look at the expanded column method before moving on to the short multiplication method.

The place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.
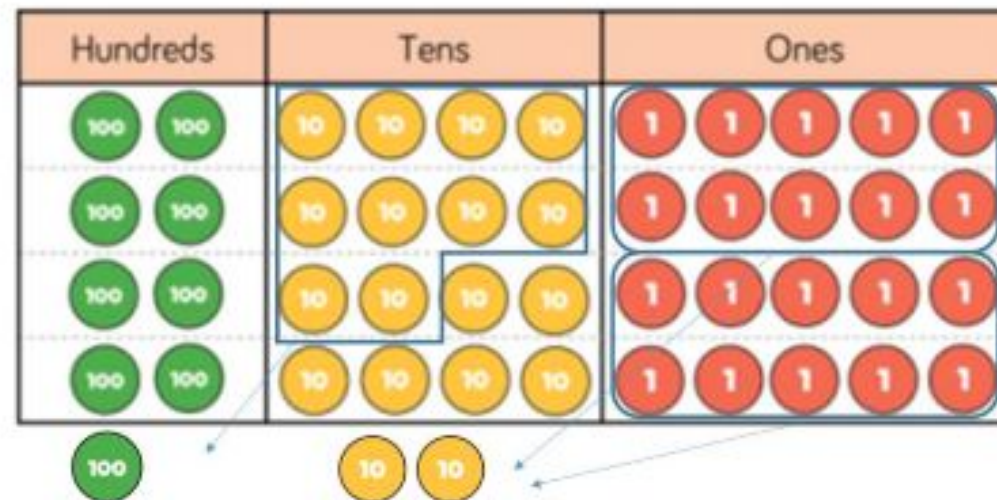
Skill: Multiply 3-digit numbers by 1-digit numbers	Year: 3/4

$$245 \times 4 = 980$$

|	H	T	O
	2	4	5
×			4
	9	8	0
	1	2	
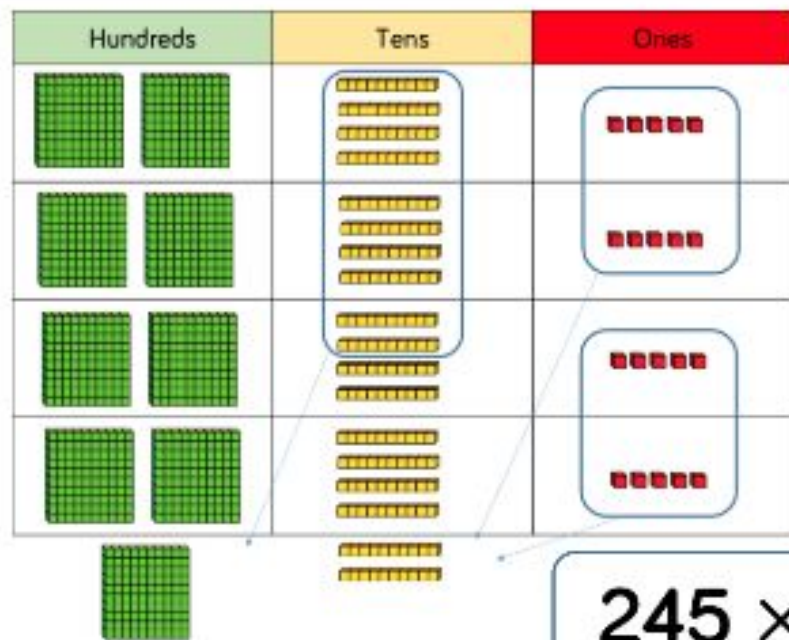
When moving to 3-digit by 1-digit multiplication, encourage children to move towards the short, formal written method.

Base 10 and place value counters continue to support the understanding of the written method. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.

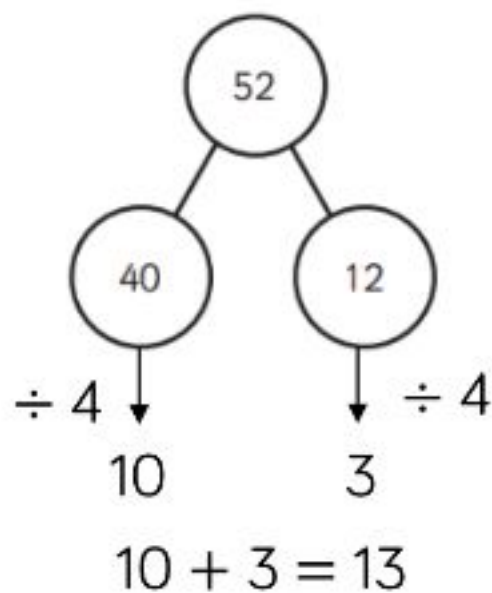| Skill: Divide 2-digits by 1-digit (sharing with exchange)	Year: 3/4

Tens	Ones

52

| ? | ? | ? | ? |

$$52 \div 4 = 13$$

52

40   12

$\div 4$ $\div 4$

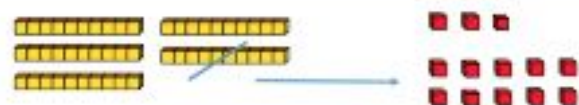10   3
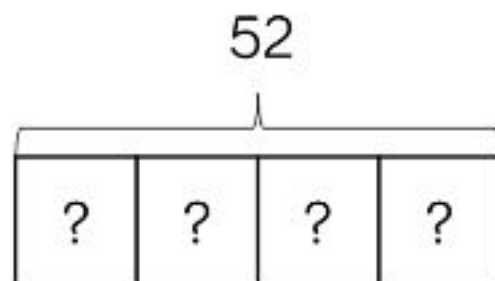
$10 + 3 = 13$

Tens	Ones

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.
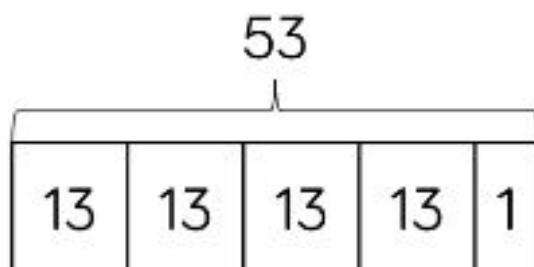
Flexible partitioning in a part-whole model supports this method.

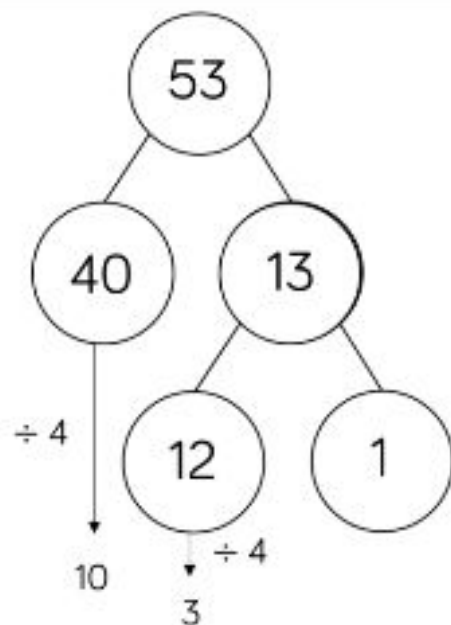| Skill: Divide 2-digits by 1-digit (sharing with remainders)	Year: 3/4

When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.
Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made.
Flexible partitioning in a part-whole model supports this method.

Tens	Ones

53

13	13	13	13	1

$$53 \div 4 = 13 \text{ r}1$$

53

40   13

÷ 4

12   1

10

÷ 4

3

Tens	Ones

Equipment

- Number line
- Number square
- Dienes blocks
- Place value charts
- Number fans
- Digit cards
- Dice
- Money
- Counters
- Problem solving cards
- Protractor
- Weighing scales and weights
- Rulers
- Tape measures
- Beads
- Mini clocks
- 2D and 3D shapes
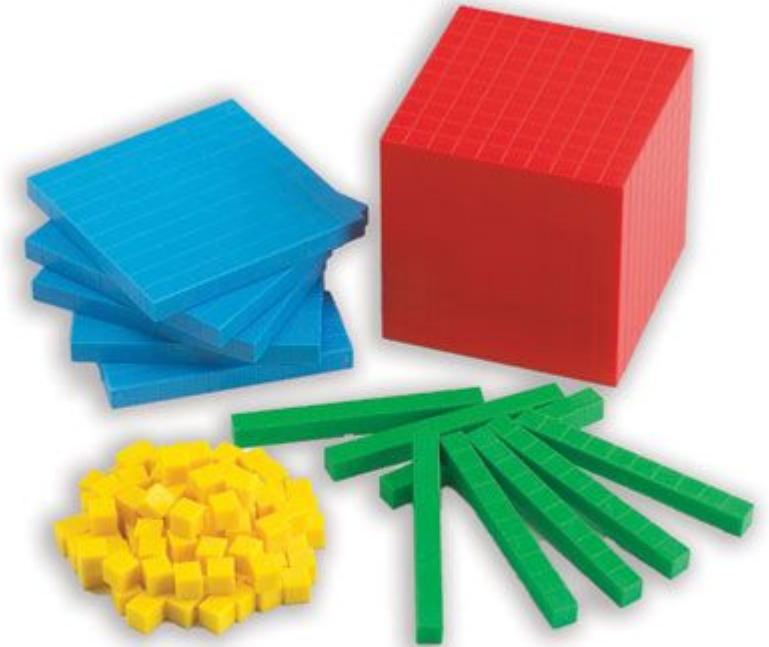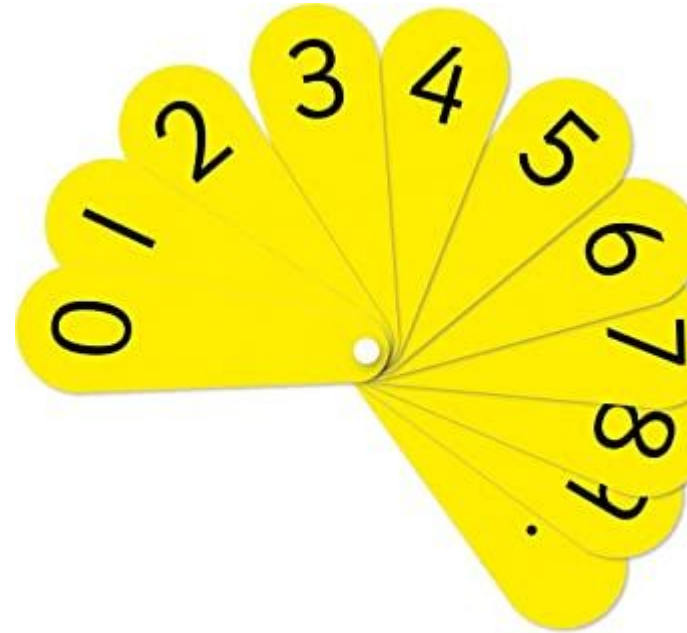
100 Square Grid

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
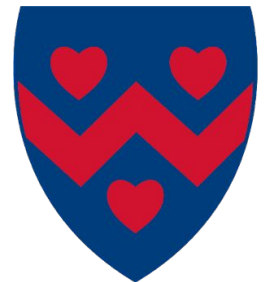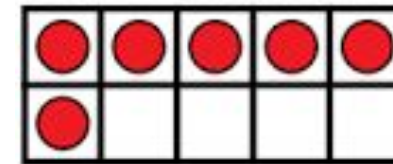
Websites and Apps

- TT Rockstars – website / app
- Maths Shed
- Topmarks e.g. Hit the Button
- MyMaths
- BBC Bitesize
- Mathsframe