Maths at St Katherine's

Key Stage 1

New Concepts by Year Group

Reception

- Counting
- Comparison
- Part-whole
- Representations of number

Year 1

- Addition and subtraction
- Number bonds to 10
- Place Value
- Fractions ½

Year 2

- Multiplication and division
- 2, 3, 5, 10 x tables
- Fractions –adding, equivalence, non-unitary

Reception

- Direct teaching
- Learning through play
- Daily access to high quality play that expose number/shape and stimulate maths thinking
- Individual observations to track understanding

Dice

Cubes

Balance Scales

Watch

Real coins

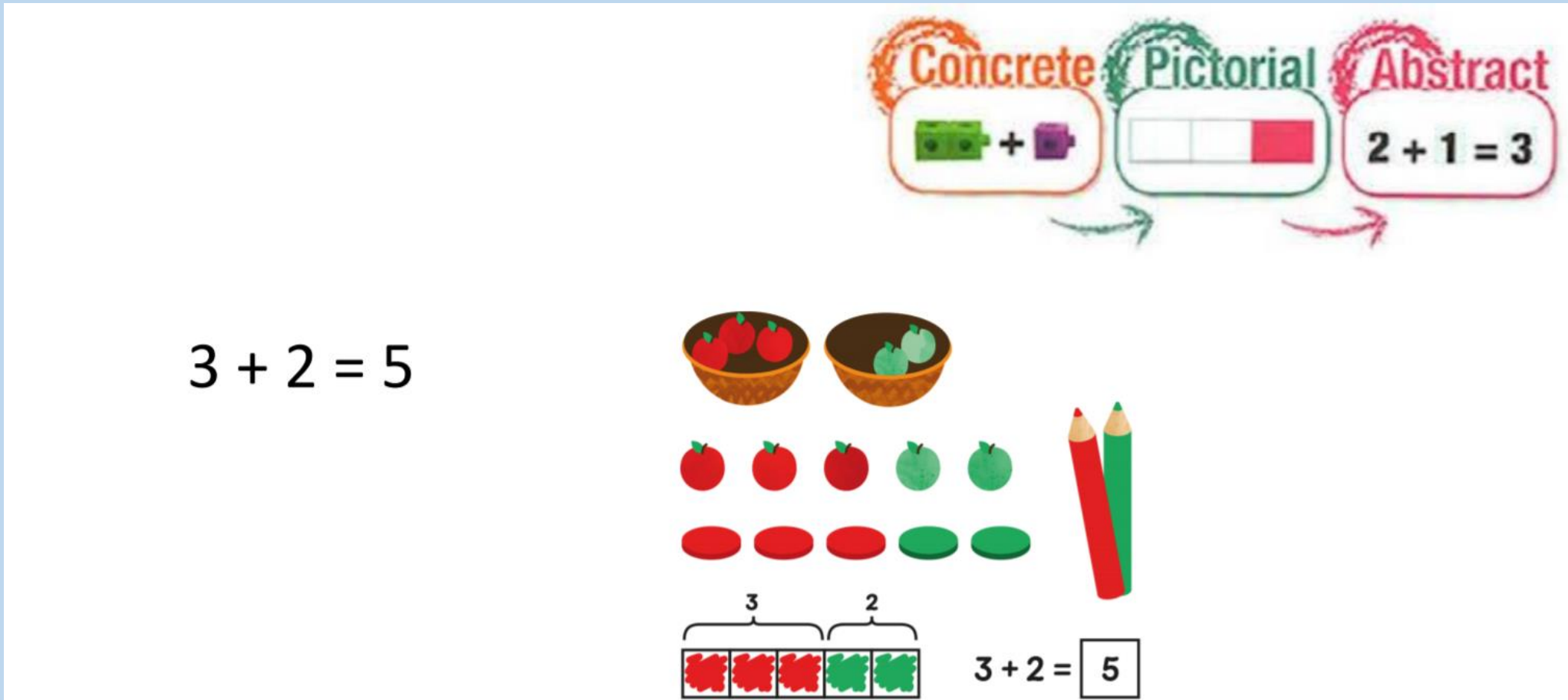Cuisenaire rods

Height chart

Marbles

Numicon

What is counting?

- EYFS progression chart

Part whole model – NumberBlocks episode 'The Whole of Me'

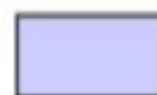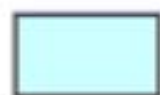# Concrete then pictorial then abstract for all new concepts (CPA)

Number Facts Below 20

+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10
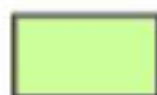
	Zero in Addition		Doubles, Doubles Plus One		Add With Ten (10 as an Addend)
	Counting On 1, 2, 3; Order Property		Make a Ten (adding 7, 8, 9)		

+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10

Addition with 2 digit numbers

- Eg
- 46 + 5 =
- 46 + 30 =
- 46 + 21 =
- 46 + 45 =
- 98 + 7 =

Subtraction with 2 digit numbers

- 46 – 2 =
- 46 – 7 =
- 46 – 21 =

Addition and subtraction as inverse

- 4 + ⬜ = 12

- 5 + 7 + ⬜ = 20

- 36 - ⬜ = 20

- ⬜ - 7 = 12

Times Tables

Why learn your times tables?

Really establish the patterns with the 2 x table before learning it by rote and before trying to learn all the others

Say the multiplication fact, not the multiple
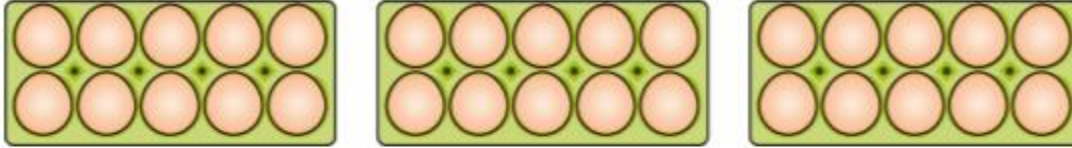
Go slowly just up to 5 x 2 to start with

Have your child write it out and look at the products – point out the pattern – all even

Use concrete apparatus like 2p coins to represent the fact

Call out individual facts eg 7 x 2 =   practise, practise, practise

Times tables

'How many eggs are there? Count in groups of ten.'

10   10   10

- 'Ten, twenty, thirty. There are thirty eggs.'
- 'There are three groups of ten; there are thirty altogether.'

$3 \times 10 = 30$

- 'Three is a factor.'
- 'Ten is a factor.'
- 'The product of three and ten is thirty.'
- 'Thirty is the product of three and ten.'

$1 \times 10 = 10$	$10 \times 1 = 10$
$2 \times 10 = 20$	$10 \times 2 = 20$
$3 \times 10 = 30$	$10 \times 3 = 30$
$4 \times 10 = 40$	$10 \times 4 = 40$
$5 \times 10 = 50$	$10 \times 5 = 50$
$\mathbf{6 \times 10 = 60}$	$\mathbf{10 \times 6 = 60}$

Skip counting in fives – number line:

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0   5   10  15  20  25  30  35  40  45  50  55  60
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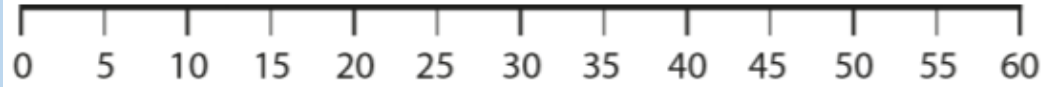
Skip counting with groups of five objects – cardinality visible:

...
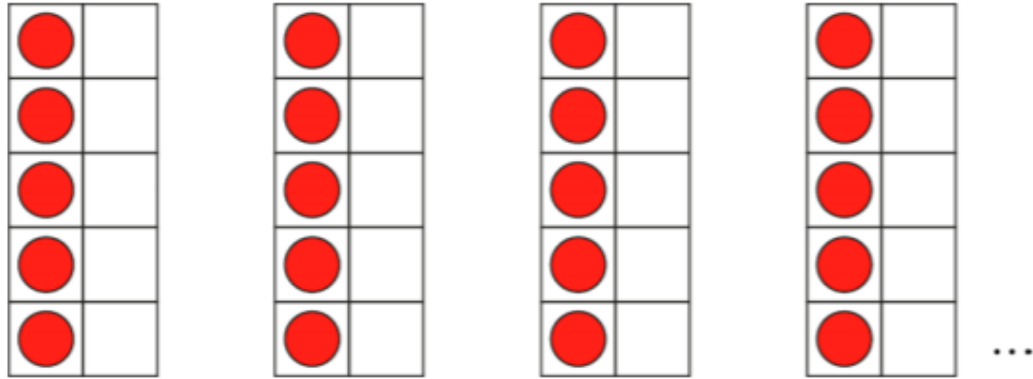
Skip counting groups of five – tally arrangement:

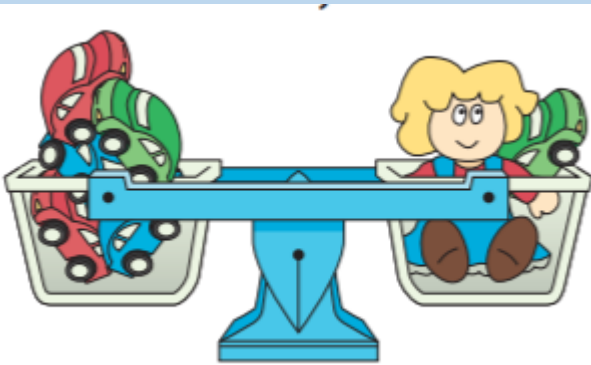...

$6 \times 5 = 30$

$3 \times 10 = 30$
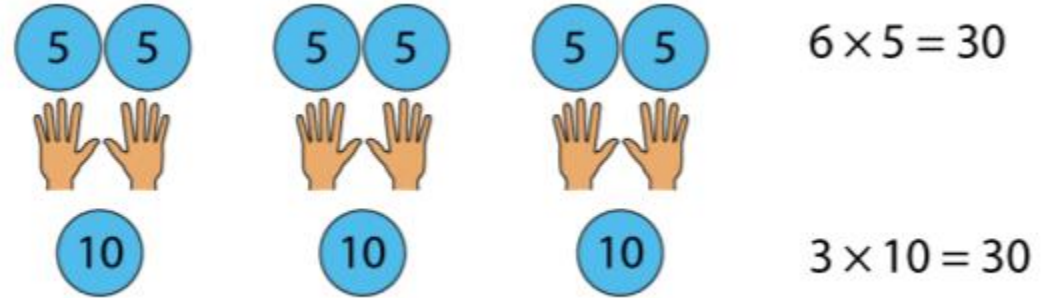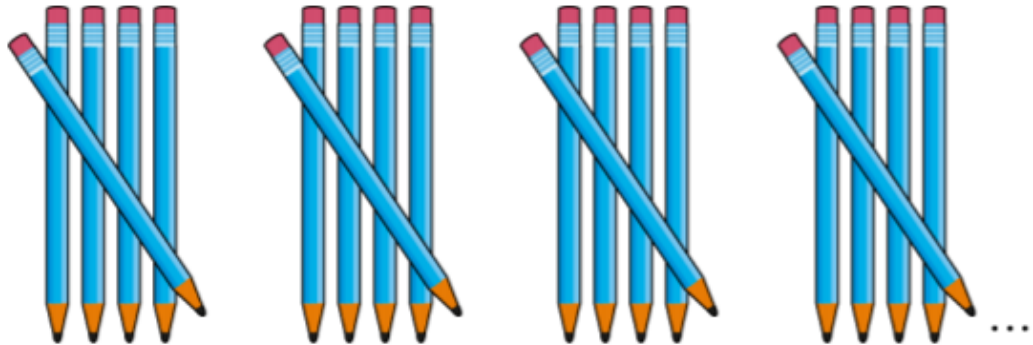
Extension by digging deeper not by accelerated curriculum Year 1 examples

Lollies cost 5p each.
A pack of 3 lollies costs 13p.
How much money do you save when you buy a pack of 3 lollies instead of 3 single lollies?

The doll weighs the same as how many cars?

Gemma thought of a number. One more than her number was 18.
What was her number?

Gemma thought of a number. Ten more than her number was 67.
What was her number?

Write a pair of numbers in the boxes to add to 12.

⬛ + ⬛ = 12

And another pair, and another, and another.
Can you find all possibilities? Convince me!

Gemma thought of a number. Ten less than her number was 71.
What was her number?