St Michael's Year 1 Maths Parent Information

Count forwards and backwards within 100

By the end of year 1, pupils must be able to count forwards and backwards, within 100, without visual aids.

Count forwards and backwards, starting from any number.

19, 20, 21, 22, 23…

82, 81, 80, 79, 78….

…seven, eight, nine, ten, eleven, twelve, thirteen…

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

Give the name of any number when it is indicated on the hundred square.

nineteen

forty eight

Rehearse dual counting; counting first with the number names and then showing the structure of the numbers.

When told the name of a number on the hundred square, use its structure to help find it.

Thirty four has three tens and four ones

….seven, eight, nine, one ten, one ten and one, one ten and two, one ten and three…..

Recognise similarities in the structure of the number system.

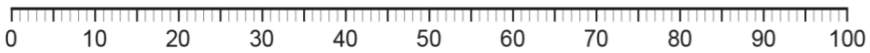
1, 2, 3, 4, 5

31, 32, 33, 34, 35

1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

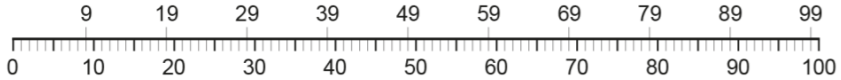
Identify the position of numbers on the number line

Place counters or tap on the Gattegno chart to show the parts of a number.



1 NPV-1

Use a partially marked number line to support counting backwards through multiples of ten.

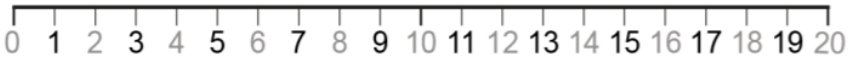


Twenty, nineteen, eighteen, seventeen, sixteen, fifteen…….

Regularly rehearse counting backwards from 20 to 10 due to the irregularity of the number names

Reason about the location of numbers to 20 within the linear number system.

Mentally visualise a number line, with consecutive whole numbers equally spaced along it.

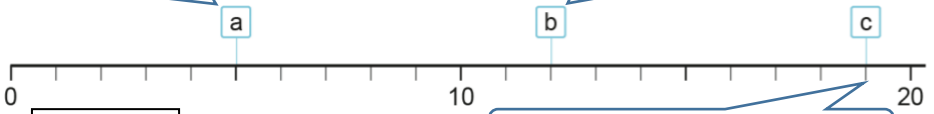


Draw number lines, with consecutive whole numbers equally spaced.

Use efficient strategies and appropriate reasoning, including working backwards from a multiple of 10, to identify or place numbers on marked number lines.

a is 5 because it is halfway between 0 and 10.

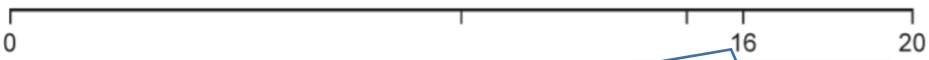
b is 12 because it is 2 more than 10.



1 NPV-2

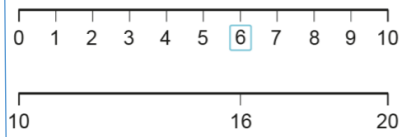
c is 19 because it is one less than 20.

First I find and mark the midpoint of the line.



Pupils should also be able to estimate the value or position of numbers, relative to both ends of the number line, beginning with a 0 to 10 number line, then moving on to 0 to 20 and 10 to 20 number lines.

16 is about here because it is just over halfway between 10 and 20.



Pupils should use their knowledge of the position of the numbers 0 to 10 on a number line to help them to estimate the value or position of the numbers 10 to 20.

Fluently add and subtract within 10.

Move beyond counting forwards or backwards in ones, to more efficient strategies and eventually to automatic recall of these number facts.

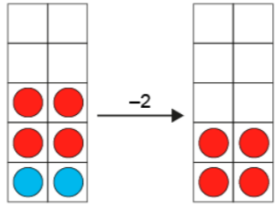
Recognise that 3 + 2, for example, is the same as 2 + 3. Have automatic recall of the corresponding subtraction facts, for example 5 – 3 and 5 – 2.

Compose and partition numbers within 10 before moving on to formal addition and subtraction.

1 NF-1

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

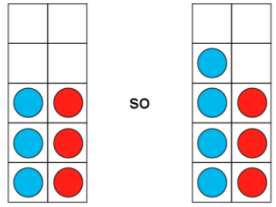
If I subtract 2 from an even number I get the previous even number, so 6 minus 2 is equal to 4.



6 – 2 = 4

Derive additive facts within 10 from previously memorised facts or knowledge.

I know that double 3 is equal to 6, so 4 plus 3 is equal to 7.

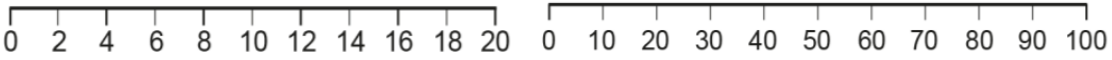


3 + 3 = 6 so 4 + 3 = 7

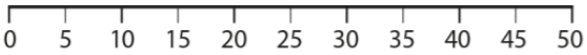
Count forwards and backwards in multiples of 2, 5 and 10.

Count by reciting just the number names, without the support of visual representations.

Ten, twenty, thirty…



Count with the support of visual representations and gestural patterns, such as pointing to numerals on a number line or 100 square, or tap out the numbers on a Gattegno chart.



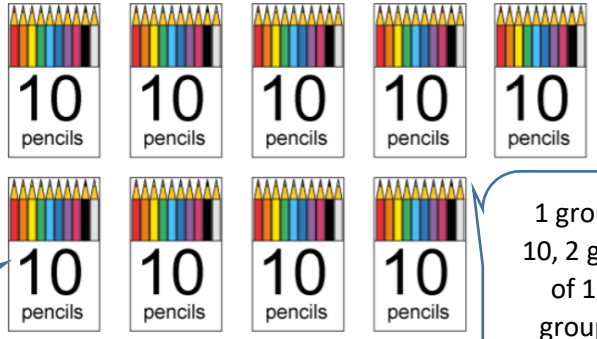
Count forwards starting the sequence with numbers other than 2, 5 or 10

Fifteen, twenty, twenty five, thirty…

1 NF-2

The pencils are in groups of 10, so we will count in tens.

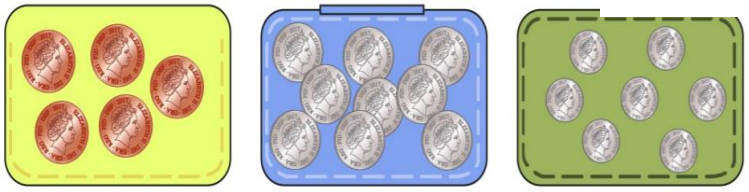
How many pencils are there?



Connect counting in multiples with finding the total quantity for repeated groups

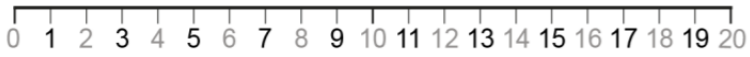
1 ten, 2 tens, 3 tens…

1 group of 10, 2 groups of 10, 3 groups of 10…



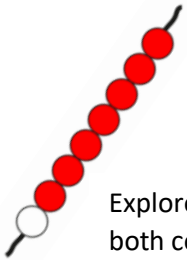
2p coins 10p coins 5p coins

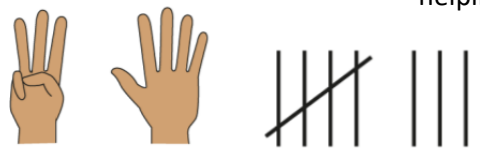
Apply knowledge of counting in multiples of 2, 5 and 10 to find the value of a set of like coins and to find how many of a particular denomination is required to pay for a given item.



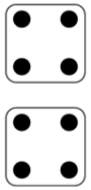
Recite the odd number sequence, both forwards and backwards

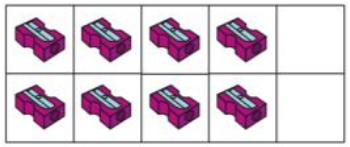
Compose and partition numbers to 10





Explore varied cardinal (quantity) representations, both concrete and pictorial, which support identification of the 'numbers within a number.'

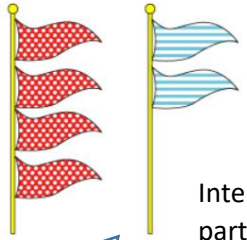




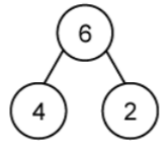
Explore different ways that a number can be partitioned and put back together, helping to understand that addition and subtraction are inverse operations.

Repeatedly partition and recombine the whole, in different ways, understanding that the total quantity is

There are 6 flags. 4 are spotty and 2 are stripy.

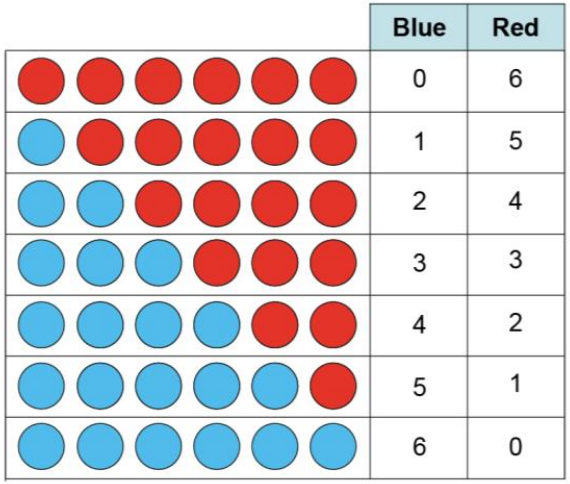


6 is the whole. 4 is a part. 2 is a part.

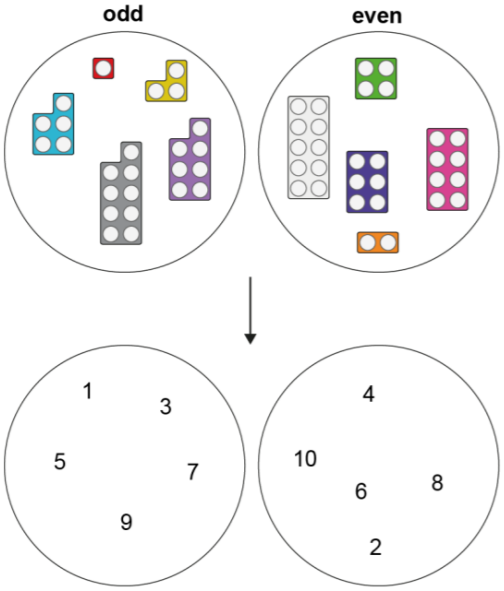


Interpret and sketch partitioning diagrams to represent the ways numbers can be partitioned or combined.

Work systematically to partition each of the numbers to 10 into 2 parts, recognising that there is a finite number of ways that a given number can be partitioned.



Blue	Red
0	6
1	5
2	4
3	3
4	2
5	1
6	0



1 AS-1

Pay attention to the patterns observed when working systematically

- in each step, the value of one part increases by 1 and the value of the other part decreases by 1, while the whole remains the same

- number pairs are repeated, but with the values reversed,

Write addition and subtraction equations to express the different ways that numbers can be composed and decomposed.

$6=2+4$ $6=4+2$ $6-4=2$ $6-2=4$

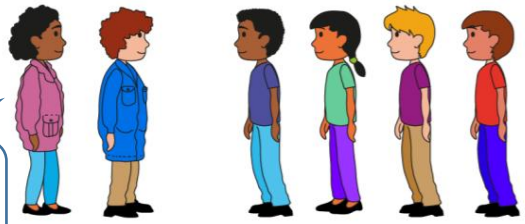
Recognise odd and even numbers, up to 10, based on whether they can be composed of groups of 2 or not.

Read, write and interpret additive equations

Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.

1 AS-2

How many children are not wearing coats?



The 6 represents the total number of children.

The 2 represents the number of children that are wearing coats.

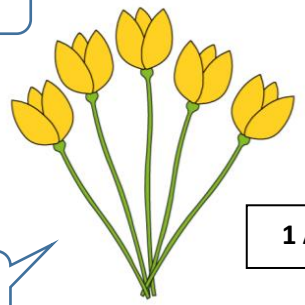
There are 6 children altogether. 2 children are wearing coats. 4 children are not wearing coats.

$6 - 2 = 4$

We can write this as 6 minus 2 is equal to 4.

The 4 represents the number of children that are not wearing coats.

How many flowers are there altogether?



The 5 represents the number of flowers in 1 bunch.

There are 5 flowers in one bunch. There are 2 flowers in the other bunch. There are 7 flowers altogether.

The 7 represents the total number of flowers.

$5 + 2 = 7$

The 2 represents the number of flowers in the other bunch.

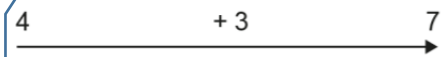
We can write this as 5 plus 2 is equal to 7.

How many children are on the bus now?

The 4 represents the number of children that were on the bus at the start.

We can write this as 4 plus 3 is equal to 7.

First 4 children were sitting on the bus. Then 3 more children got on the bus. Now 7 children are sitting on the bus.

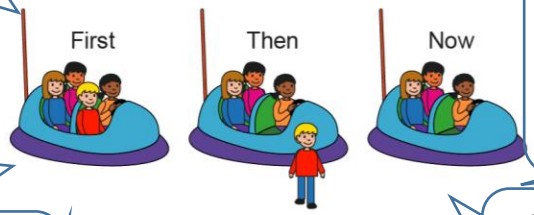


$4 + 3 = 7$

The 3 represents the number of children that got on the bus.

The 7 represents the number of children that are on the bus now.

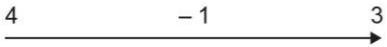
How many children are in the bumper car now?



The 4 represents the number of children that were in the car at the start.

We can write this as 4 minus 1 is equal to 3.

First there were 4 children in the bumper car. Then 1 child got out. Now there are 3 children in the bumper car.



$4 - 1 = 3$

The 1 represents the number of children that got out of the car.

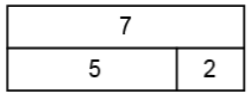
The 3 represents the number of children that are in the car now.

Link **expressions** (e.g. 5+2 and 6–2) to contexts **before** learning to link **equations** (5+2=7 and 6-2=4) to contexts.

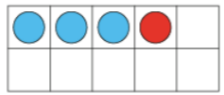
First learn to describe the context using precise language.

Then learn to write the associated expression or equation.

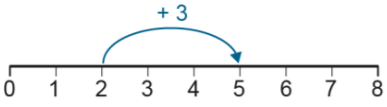
Then use precise language to describe what each number in the expression or equation represents.



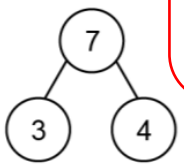
$7 - 2 = 5$



$3 + 1 = 4$



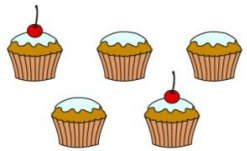
$2 + 3 = 5$



$7 - 3 = 4$

Relate addition and subtraction contexts and equations to mathematical diagrams such as bar models, number lines, tens frames with counters, and partitioning diagrams.

Know equations can be written in different ways, including that the position of the equals symbol can vary and that, for addition, the addends can be written in either order and the sum remains the same.



$2+3=5 \quad 3+2=5 \quad 5-3=2 \quad 5-2=3$

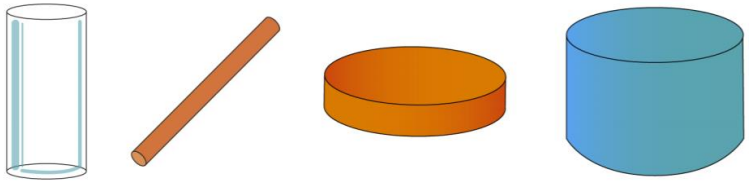
$5=2+3 \quad 5=3+2 \quad 2=5-3 \quad 3=5-2$

Understand expressions such as 3+5 represent additive structures, either within a real-life context or within an abstract numerical situation and that expressions on each side of an equals symbol have the same value. The 4 additive structures are **aggregation** (combining 2 parts to make 1 whole), **partitioning**, (separating 1 whole into 2 parts), **augmentation** (increasing a quantity by adding more) and **reduction** (decreasing a quantity by taking some away).

Recognise common 2d and 3d shapes.

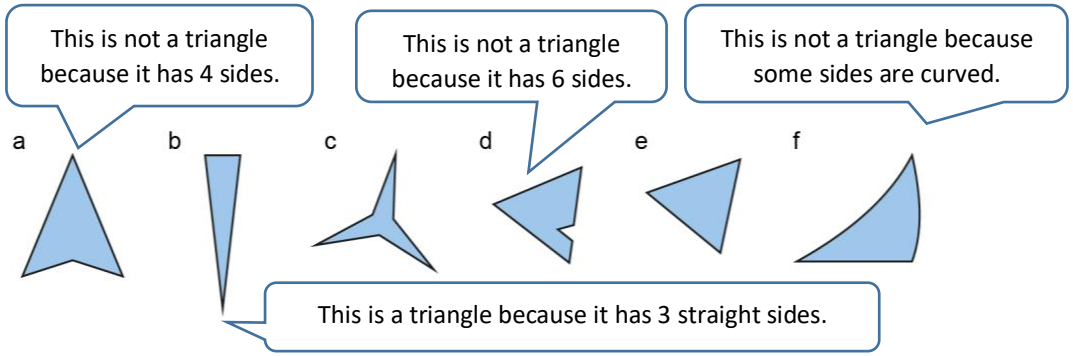
1 G -1

Recognise and name, at a minimum: rectangles (including squares), circles, and triangles, cuboids (including cubes), cylinders, spheres and pyramids.

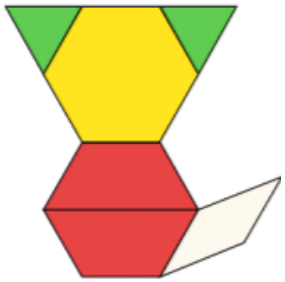


Describe, using informal language (for example, “long and thin”), the differences between non-similar examples of the same shapes, and recognise that these are still examples of the given shape.

Distinguish a given named shape type from plausible distractors.



Recognise common shapes when they are presented in a variety of orientations and sizes and relative proportions, including large shapes outside the classroom.



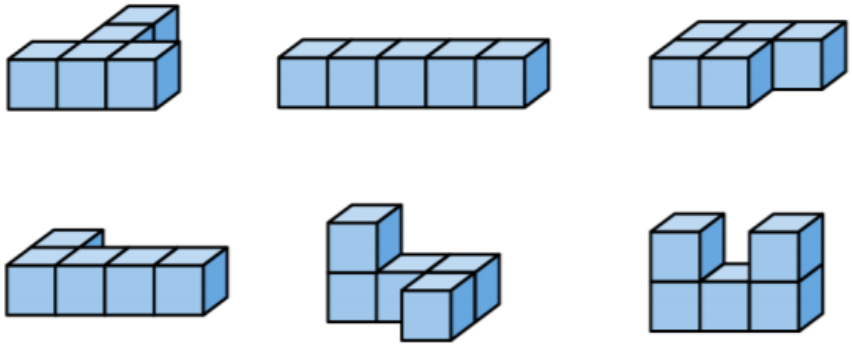
Arrange 2D shapes to match an example compound shape, beginning where the constituent shapes in a given example image are the same size and colour as the actual shapes being used.

By the end of year 1, be able to copy a pattern block picture, and make a good attempt at copying a tangram picture, without overlaying the pieces on the example.

Compose 2d and 3d shapes from smaller shapes.

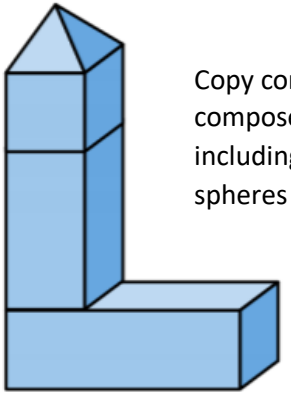
Work practically, exploring shapes (for example, shapes cut from card, pattern blocks and tangrams) and putting them together to make new shapes.

1 G -2



Arrange 3D shapes to match an example compound shape, for example joining a given number of multilink blocks to match an example.

Compare compound shapes and identify those that are the same, requiring rotation of the shapes in various directions, and providing opportunities to develop spatial language including: left, right, top, middle, bottom, on top of, below, in front of, behind and between.



Copy compound shapes composed of other 3D shapes, including cuboids, cylinders, spheres and pyramids.