

Headteacher: Ms Rachel Neville



Maths Calculation Policy ~ September 2020

Amended Jan 2022 (in line with the new EYFS framework)

This policy highlights the progression in calculations and key representations for the four operations.

It should be viewed in conjunction with:

- o WRM schemes of learning
- Mathematics programme of study (2014)
- Mathematics Guidance KS1 and 2 (June 2020) ~ Ready to progress criteria
- Statutory framework for the early years foundation stage (September 2021)



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Maths Calculation Policy – Sept 2020

Primary School & Complex Needs Resource Base

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ADDITION

Vocabulary and Stem sentences

sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'. _______ is a part, _____ is a part. The whole is _____

Objective Concrete **Pictorial** Abstract EYFS 4 + 2 = 6Use real object (using children's ELG: Number interests, eg. cars, teddies, Have a deep 6 = 4 + 2dinosaurs...) understanding of number to 10, including the composition of each number. 1, 2, 3, 4, 5, 6. Subitise up to 5. 3 + 2 = 53 Balls 2 Balls Automatically recall number bonds (+) up to 5 3 is a part 5 and some Using 5 frames and objects. 2 is a part number bonds to 10. 5 is the whole 2 3

Objective	Concrete	Pictorial	Abstract
Year 1 Addition add one-digit and two digit numbers to 20, including zero		Children complete the ten frames with counters/cubes.	6+5= 6 + □ = 11 6 + 5 = 5 + □ 6 + 5 = □ + 4
			7 + 4 = 11
		10 6 4	6 + 4 = 10 10 = 6 + 4
		7 4 3	
solve one-step problems that involve addition	Use real objects to represent the story.	USE MASTER COPY FOR IMAGE!	First there were people on the bus. Then more people got on the bus. Now there are people on the bus.



Objective	Concrete	Pictorial	Abstract
• two two- digit numbers	10s 1s 10s 1s 1 1 1 1 1 1 1 1	Image: Draw sticks and dots. Group 10 ones and show exchange.	30 + 20 = 50 6 + 5 = 11 50 + 11 = 61 36 $\frac{+25}{61}$ Introduce formal method alongside concrete and pictorial representations.
Objective	Concrete	Pictorial	Abstract
 adding three one-digit numbers 	Use Numicon to show bonds to 10.		7+6+3=16 10 Add the numbers that make / bridge 10 or a known fact first. Then add the third number.



	Thousands Hundreds Tens Ones Image: Construction of the second seco	1,378 + 2,148 = 3,526 (Can also draw on place value grid)					
Objective	Concrete	Pictorial	Abstract				
Year 5 Addition	HTh TTh Th H T O	At this stage, children					
numbers with		should be	1 0	4	3 2	2 8	1
more than 4		encouraged to work	+ 6	1	7 3	5 1	1
using formal		in the abstract, using	1 6	6	0 f	5 9	1
written		to add larger		1			
(columnar addition)	Place Value counters are most effective concrete resource if needed to add numbers with more than 4 digits	numbers efficiently.		I			



SUBTRACTION

<u>Vocabulary and Stem sentences</u> parts and whole, subtract, minus, take away, difference, fewer, decrease, less than The whole is _____ is a part, ____ is a part.

Objective	Concrete	Pictorial	Abstract
<u>EYFS</u>	(use practical objects, taking into account children's interests)	(children draw circles to represent the objects, crossing out as they 'take-away')	
ELG: Number Have a deep understanding of numbers to 10, including the composition of each number.		$\bigcirc \bigcirc \checkmark$	" 1 less than 3 is 2" " 3 take-away 1 is 2" 3 – 1 = 2
Automatically recall number bonds (-) up to 5 and some number bonds to 10.	Use part/whole models, $5/10$ frames to model subtraction number bonds, too.		6 – 2 = 4

Objective	Concrete	Pictorial	Abstract
Y1 subtraction subtract one- digit and two- digit numbers to 20, including zero Counting back		Children to represent what they see pictorially	7 - 3 = 4
		1 2 3 4 5 6 7 8 9 10	
Finding the difference	Use cubes, Numicon or Cuisenaire rods, other objects can also be used). Calculate the difference between 8 and 5.	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.	Find the difference between 8 and 5. 8 – 5, the difference is Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference
solve one-step problems that involve subtraction	There were 16 biscuits on a plate and Finn ate 5 of them. (Count out 16 biscuits onto plate, then physically take- away 5)	First Then Now Image: Constraint of the state of th	First there were biscuits. Then were eaten. Now there are biscuits. 16 - 5 =

Objective	Concrete	Pictorial	Abstract
Y2 subtraction subtract numbers using concrete objects, pictorial representation and mentally		1 2 3 4 5 6 7 9 9 10 11 12 13 9 15 16 17 18 19 20 $14 - 6 = 8$ $-2 - 4$ $4 2 - 2 - 4$ $(crossing 10)'$	14 - 6 = 8
• a two- digit number and ones	Use dienes to represent the number then remove the ones. 48 - 7 10s 1s 48 - 1	Children to represent the base 10 pictorially.	4 8 - 7 4 1





<u>Objective</u>	Concrete	Pictorial	Abstract
<u>Y5/6</u>		At this stage, children	
subtract whole	HTh TTh Th H T O	should be	2 9 3 13 8 2
numbers with	$\bigcirc \varnothing \bigcirc \varnothing \varnothing \bigcirc \emptyset \varnothing \bigcirc 0 \bigcirc 0 \bigcirc 0 \emptyset$	encouraged to work	- 1 8 2 5 0 1
digits,		in the abstract, using	1 1 1 8 8 1
including using		column method to	
written		subtract larger	
methods		numbers efficiently.	
(columnar subtraction)			
			4
solve addition	Ones Tenths Hundredths		5. 14 3
and			- <u>2.70</u>
subtraction multi-step			2.73
problems in			
contexts, deciding			
which			
operations			
to use and			
why.			