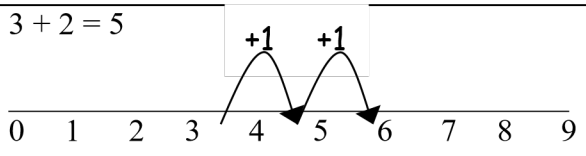
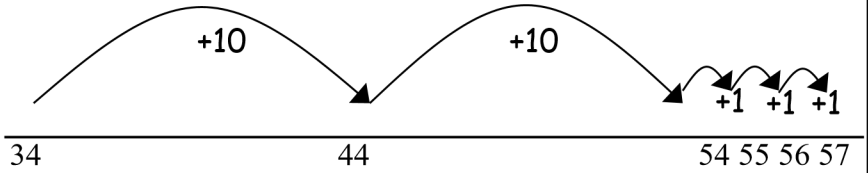
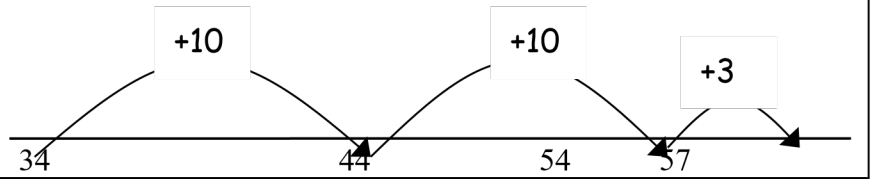
Calculation Policy

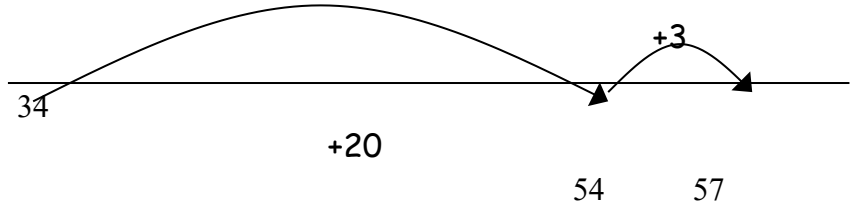
September 2025

Signed (Chair of Trustees):	[redacted]
Date:	September 2025
Date of Review:	September 2026

Arbor Academy Trust reviews this policy annually. The Trustees may, however, review the policy earlier than this, if the Government introduces new regulations, or if the Trust receives recommendations on how the policy might be improved. This document is also available in other formats e.g. e-mail and enlarged print version, on request to the School Offices and is displayed on the schools' websites.

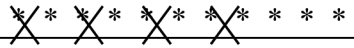
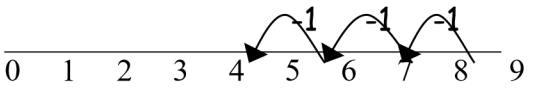
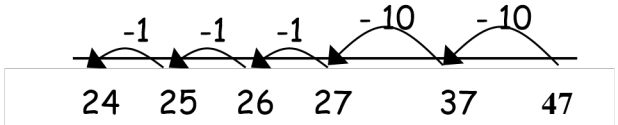
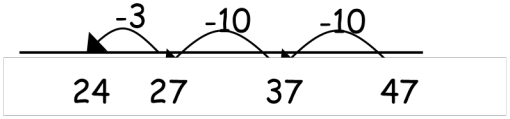
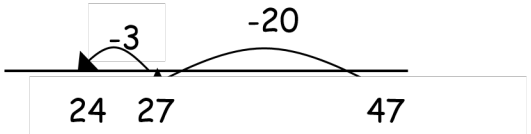
Addition

The Different Stages	Number Development	Strategy – What it Looks Like
Stage 1: Counting sets of object	Move on to combining	
Stage 2: Combining 2 sets of objects		For example 6 + 2 the children may get 6 cubes, then 2 more and count how many altogether.
Stage 3: Drawing pictures/dots – informal jottings. Then counting back	Single unit add single unit	= 5 4 + 2 = 6 * * * * + * *
Stage 4: Counting on a number line with numbers on it.		3 + 2 = 5 
Stage 5: Steps in addition may be recorded on an empty number line. Steps often bridge through a multiple of ten.	1) Partition smaller number into tens and units 2) Add on the tens – progress to multiples of ten 3) Add on the units and groups of units	34 + 23 = 57  34 + 23 = 57 

		<u>Grouping tens</u> 34 + 23 = 57 
Stage 6: Partitioning tens and units horizontally (KS2 or when appropriate)	Move on to vertical partitioning Tens and units and hundreds and tens and units.	47 + 76 = (40 + 70) + (7 + 6) leading *to* = 110 + 13 = 123
Stage 7: Partition numbers vertically in a column		47 = 40 + 7 + <u>76</u> = <u>70 + 6</u> 110 + 13 = 123

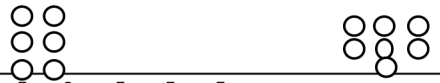
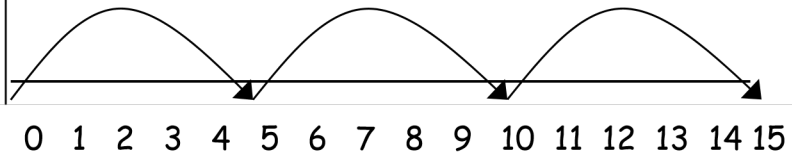
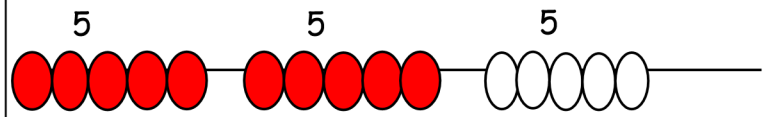
Stage 8: The numbers in columns adding the units first		67 + 24 67 + 24 1 1 80 9 1 131 + 209 131 + 209 10 30 300 340
Stage 9: Compact method – where numbers get carried into the next column	Move on to adding with decimals up to three decimal places	587 + 475 587 + 475 1062 1 1 3587 + 675 3587 + 675 4262 1 1 1

Subtraction

The Different Stages	Number Development	Strategy – What it Looks Like
Stage 1: Practical -	Practically get a group of objects and take some away	
Stage 2: Jottings: drawing a set of objects and then crossing some out.		11- 4 = 7 
Stage 3: count back on a number line with numbers on		6 – 3 = 3 
Stage 4: Learning to count forward and back on an empty line		47 – 23 = 24  47 – 23 = 24  47 – 23 = 24 

Stage 5: Partitioned numbers are then written under one another – this is how we start to introduce the column subtraction method (KS2 or when appropriate)		74 -23 7 0 + 4 2 0 + 3 5 0 + 1 = 51	
Stage 6: Expanded decomposition (2 digit numbers) Leads to the shorter version of the column subtraction method. We always start with the units number		74 – 27 7 0 + 4 2 0 + 7	*60 14* ~~7 0 + 4~~ 2 0 + 7 4 0 + 7 = 47
Stage 6: Expanded decomposition (3 digit numbers)		741-367 7 0 0 + 4 0 + 1 3 0 0 + 6 0 + 7	*600 130 11* 7 0 0 + 4 0 + ~~1~~ — 3 0 0 + 6 0 + 7 3 0 0 + 7 0 + 4= 374
Stage 7: Compact Decomposition		74- 27 6 *14* 7 ~~4~~ — 2 7 4 7 *6 13 11* *7* 4 1 — 3 6 7 3 7 4 5008-1257 *9* 4 *~~10~~ 10* 5 ~~0 0~~ ~~8~~ -1 2 5 7 3 7 5 1	

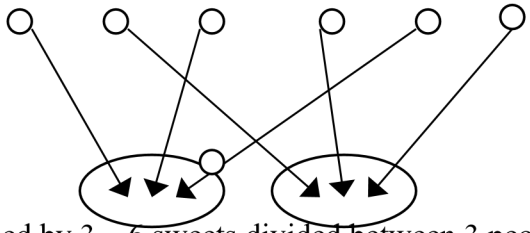
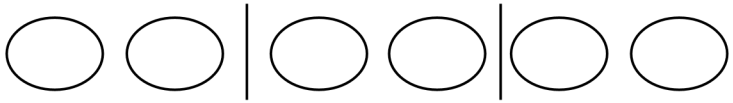
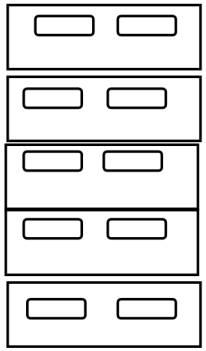
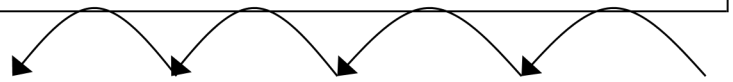
Multiplication

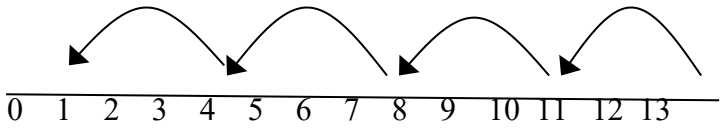
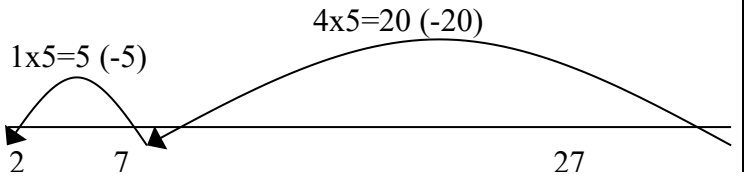
The Different Stages	Number Development	Strategy – What it Looks Like
See Mental Calculation policy section to review gaps and progression in mental times table and division facts knowledge.		
Stage 1: Counting practically in repeated groups/patterns.	Numbers up to 30	
Stage 2: Grouping using pictoral representations	2,5 10 times tables	3 x 2 = 6
Stage 3: Arrays	2,5 10 times tables	3 x 2 = 6 or 2 x 3 = 6 
Stage 4: Repeated Addition 5 times 3 is 5+5+5=15 or 3 lots of 5 or 5x3 Repeated addition can be shown easily on a number line.	All times tables TU x U	5 x 3 = 5 + 5 + 5  
Stage 5: Partitioning	TU x U HTU x U	1 3 x 5 = 1 0 x 5 = 5 0 3 x 5 = 1 5 5 0 + 1 5 = 6 5
Stage 6: Long Multiplication. The next step is to show the method of recording in a column format but showing the working. This links to the grid method above.	TU x U TU x TU HTU x TU ThHTU x U	3 8 x 7 = 2 6 6 3 0 + 8 X 7 5 6 8 x 7 = 5 6 2 1 0 3 0 x 7 = 2 1 0 2 6 6

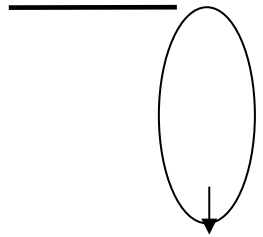
Children should describe what they do by saying the actual values of digits in the columns for example the first step in 3 8 x 7 is 30 multiplied by 7 not 3 x 7.		Leading to condensed version of long multiplication 3 8 x 7 5 6 2 1 0 2 6 6 56x27 is approximately 60 x 30= 1800 5 6 X 2 7 1 0 0 0 1 2 0 3 5 0 4 2 1 5 1 2 1
Stage 7: Short multiplication The step here involves adding 210 and 50 mentally with only the 5 in the tens column being recorded. 2 digit x 2 digit and beyond. Using rounding to make an estimation prior to the calculation.	TU x U TU x TU HTU x TU ThHTU x U	3 8 x 7 *2 6 6* *5* 3 8 x 5 6 is approximately 3 0 x 6 0 = 1 8 0 0 3 8 X 5 6 4 8 1 8 0

		4 0 1 5 0 0 1 7 6 8 1

Division

The Different Stages	Number Development	Strategy – What it Looks Like
See Mental Calculation policy section to review gaps and progression in mental times table and division facts knowledge.		
Stage 1: Children physically sharing objects	Numbers up to 30	6 sweets shared between 2 children.
Stage 2: Children will develop their understanding of division and use jottings to support calculations. (Pictoral and arrays)	2,5 10 times tables	Sharing equally 6 sweets shared between 2 people. How many do they get each? 1. Pictoral division  6 divided by 3 – 6 sweets divided between 3 people  10 ÷2= 5 
Stage 3: Repeated Subtraction	All times tables	12 ÷ 3 = 4 

Including repeated subtraction leading to a remainder.		0 1 2 3 4 5 6 7 8 9 10 11 12 13÷3= 4r1 
Stage 4: Repeated Subtraction, subtracting multiples of the divisor. (KS2 or when appropriate)	All times tables TU ÷ U	
Stage 5: Chunking method	TU ÷ U HTU ÷ U TU ÷ TU	96 ÷ 6 1 6 6) 96 - 60 10x 36 - 36 6x 0 Answer : 16 2 5 6 ÷ 7 = 7 2 5 6 7 0 1 0 x 7



		1 8 6 - 1 4 0 2 0 x 7 4 6 4 2 6 x 7 4 So 1 0 + 2 0 + 6 = 3 6 r 4
Stage 5: Short Division	TU ÷ U HTU ÷ U TU ÷ TU HTU ÷ TU	560 ÷ 4 1 4 0 4) 5 16 0
Stage 6: Long Division	TU ÷ U HTU ÷ U TU ÷ TU HTU ÷ TU	5 6 0 ÷ 2 4 2 3 2 4) ~~5 6 0~~ 4 8 0 8 0 7 2 8 Answer 23 r 8