Ashton Gate Calculation Policy: Addition and Subtraction

Early Years Foundation Framework (Development Matters)					
Count of	Count objects, actions and sounds				
 Link the 	Link the number symbol (numeral) with its cardinal number value.				
 Count k 	peyond ten.				
 Comparison 	re numbers				
 Unders 	tand the 'one more than/one less than' relationship between consecutive nu	mbers.			
 Explore 	the composition of numbers to 10				
 Automa 	atically recall number bonds for numbers 0–5 and some to 10.				
 Cardina 	ality and Counting: say number words in sequence; tag each object with one r	number word; know the last number counted gives th	e total so far		
 Subitisi 	ng: recognising small quantities without needing to count them all				
Numera	al meanings, conservation, knowing that the number does not change if thing	s are rearranged			
Strategies	Concrete	Pictorial	Abstract		
Reciting numbers from 0 to 10 (and beyond) and back from 10 to 0 Shows awareness that numbers are made up (composed) of smaller number.	Children use toys and general classroom resources to physically manipulate, group/regroup. They also use specific maths resources such as counters, snap cubes, Numicon.				
Exploring partitioning in different ways with a wide range of objects					

Add one and subtract one with numbers to 10		Number of the day is 3 One less The same as One more One less The same as One more One less The same as One more Solution of the same as O	"6 add 1 is 7"
Subitise larger numbers by subitising smaller groups	<image/>		5+2=7

Year 1 Objectives

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems







Finding the difference	Cubes can be used to create a 2 bar model		7-3=4
Counting back	Counting back (using number lines or number tracks) children start with 6 and count back 2. 6 - 2 = 4 1 2 3 4 5 6 7 8 9 10 Children can use concrete objects alongside a number line	Children to represent what they see pictorially e.g.	Children progress to an empty number line 6-2=4

Year 2 Objectives:

- Solve problems with addition and subtraction using concrete objects, pictorial representations, and mentally, including those involving number and quantities.
- Recall addition and subtraction facts to 20 fluently and derive and use related facts up to 100 which include: Add and subtract 1-digit number to 2-digit number to 100; add and subtract two two-digit numbers; add three one-digit numbers.
- Regroup a ten into ones
- Partitioning to subtract without regrouping
- Partitioning to subtract regrouping

<u>Strategies</u>	<u>Concrete</u>	Pictorial	Abstract
Adding 1 and 2 digit numbers within 20: regrouping by 10		Concrete manipulatives are used alongside number lines to support children in understanding how to partition their jumps. +2 +5 +2 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5 +5	8 + 7 = 15
		$ \begin{array}{c} 7 \\ 15 \\ 18 \\ 8 \\ 7 \end{array} $	





Year 3 Objectives:

- Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a 3-digit number and hundreds.
- Add numbers with up to three digits, using formal written method of columnar addition, where appropriate.
- Subtract numbers mentally, including: a three-digit number subtract ones; a three-digit number subtract tens; a three-digit number subtract hundreds.
- Subtract numbers with up to three digits, using formal written method of columnar subtraction, where appropriate.

<u>Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>
Adding numbers with up to 3 digits	Base 10 and place value counters are used to model. Hundreds Image: Colspan="2">Image: Colspan="2" Image:	Part whole models	265 + 164 429 1 Progressing to column addition. Children are encouraged to use this method alongside concrete and pictorial strategies to make links.



Year 4 Objectives:

- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Estimate and use inverse operations to check answers to a calculation
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why





Year 5 Objectives:

- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- Add and subtract numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

<u>Strategies</u>	<u>Concrete</u>	<u>Pictorial</u>	<u>Abstract</u>
Adding numbers with more than 4 digits		Part whole models $ \begin{array}{c} $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Subtracting numbers with more than 4 digits	Place value counters or plain counters on a grid are used to model.	Part-whole and bar models are used to represent pictorially.	Children are encouraged to use column subtraction in order to subtract large numbers efficiently. 2 9 $3 \checkmark$ 13 8 2 - 1 8 2 5 0 1 1 1 1 8 8 1
Add decimals with up to 3 decimal places	Place value counters and plain counters on a grid are used to model.	Part whole models 2.41 3.65 3.65 2.41 3.65 2.41 ? 2.41 ?	Progressing to column addition



Year 6 Objectives:

- Perform mental calculations, including with mixed operations and large numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition and subtraction
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

In Year 6, children will revisit previously learned strategies as needed, progressing to working more efficiently in the abstract.