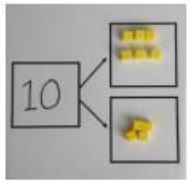
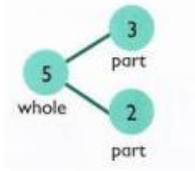
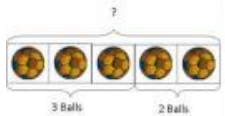
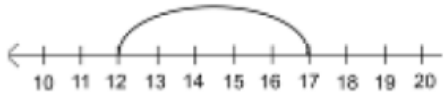
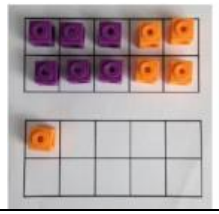
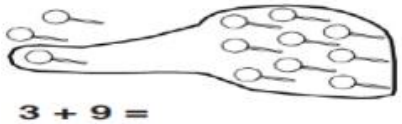
THE ASHBY FEDERATION

CALCULATION - ADDITION POLICY

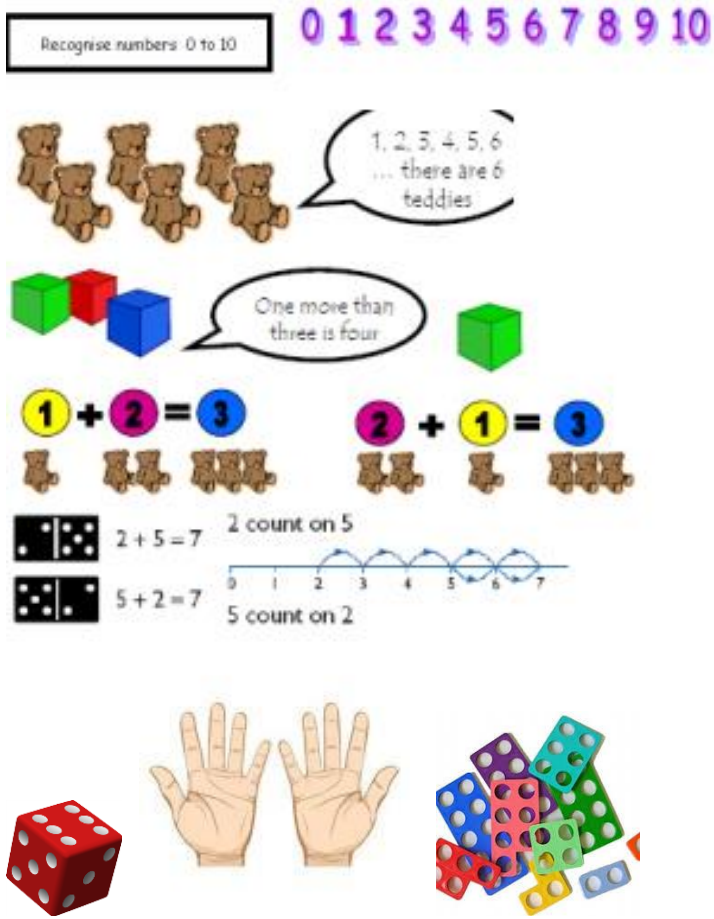
Approved by:	Executive Head Teacher
Last reviewed on:	November 2021
Next review due by:	November 2023

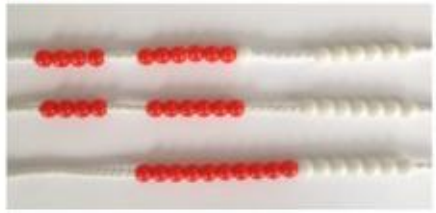
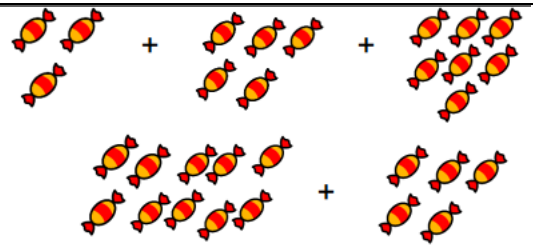
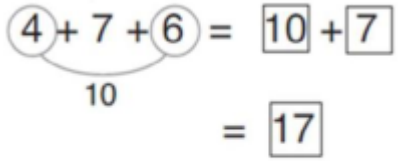
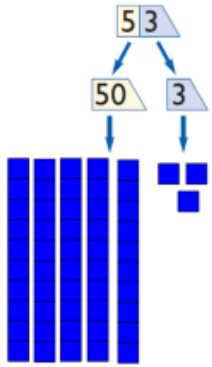
ADDITION STAGE 1			
Progression	**Concrete**	**Pictorial**	**Abstract**
Uses the language of addition –altogether.	  Activities where they have to count to find out how many there are altogether.		
Relate addition to combining two groups of objects. (Represent using pictures, objects or symbols.) Vocabulary: add, how many more, how much more, addition, equals, addend, sum, total, commutative.	   Use cubes to add two numbers together as a group or in a bar. 	   Use pictures to add two numbers together as a group or in a bar. 	$4 + 3 = 7$ $10 = 6 + 4$  Use the part-whole model, as shown above, to move into the abstract.

Starting at the bigger number and counting on.	 Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer.	12 + 5 = 17  Start at the larger number on the number line and count on in ones or in one jump to find the answer.	5 + 12 = 17 Place your larger number in your head and count on the smaller number to find your answer.
Regrouping to make 10. Vocabulary: crossing the tens boundary, bridging.	 6 + 5 = 11  Start with the bigger number and use the smaller number to make 10.	 Use pictures or a number line. Regroup or partition the smaller number to make 10. 9 + 5 = 14 1 4 +1 +4 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	7 + 4 = 11 If I am seven, how many more do I need to make 10? How many more do I add on now?
Underlying skills • Recognise numbers 0 to 10. • Count reliably up to 10 everyday objects – use 1:1 correspondence by physically moving the object being counted. • Recognise groups of objects below	**Active Learning Through Models and Images**		

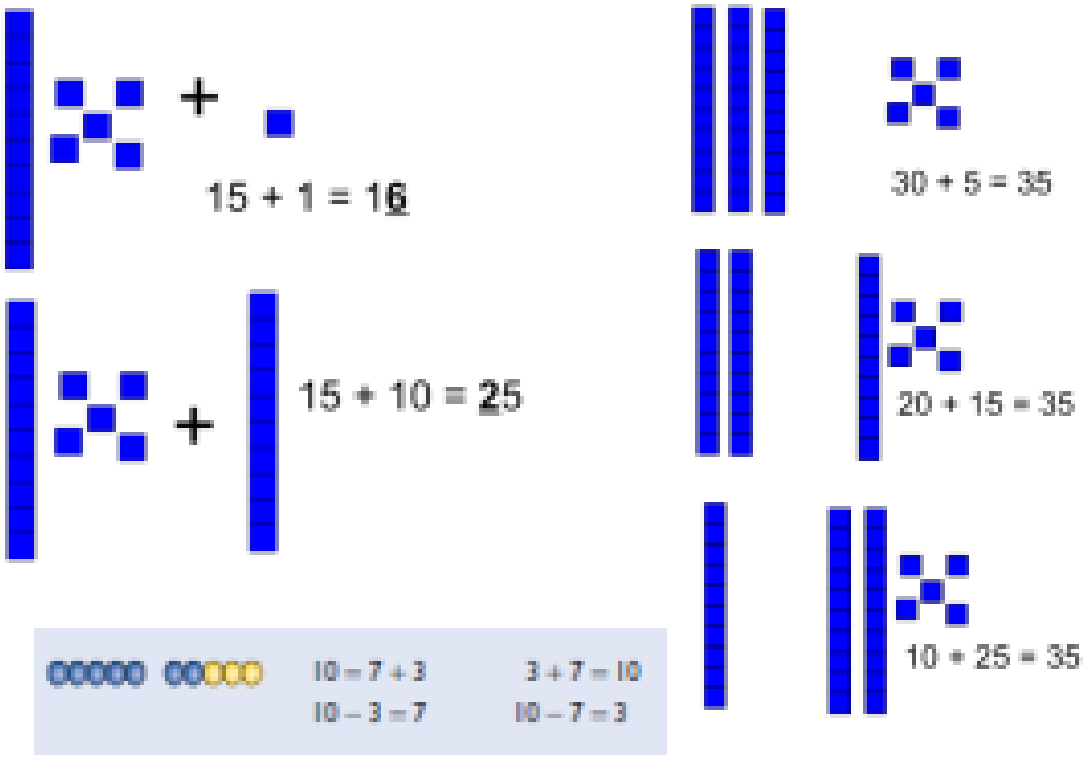
ten without counting (subitising).

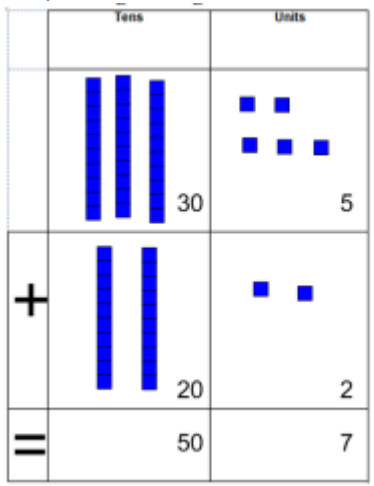
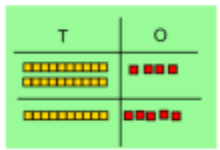
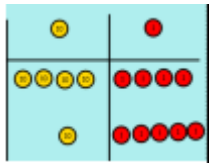
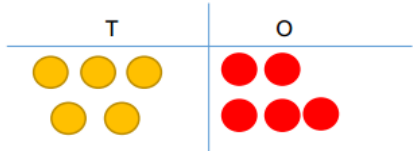
- Find one more than a given number.
- Find pairs of numbers that add to ten (number bonds).
- Understand that addition can be done in any order.

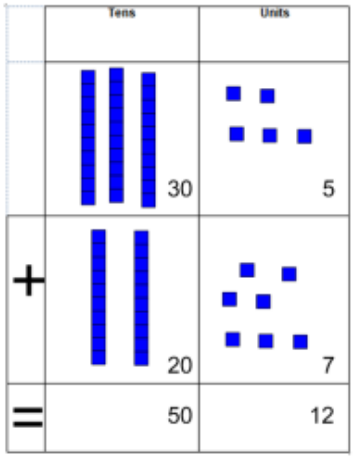
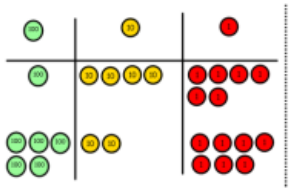
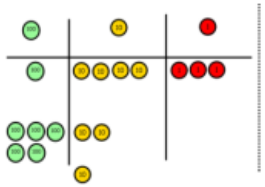


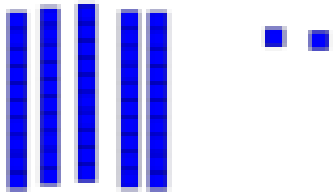
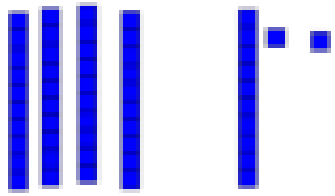
ADDITION STAGE 2			
Progression	**Concrete**	**Pictorial**	**Abstract**
Adding three single digits.	4 + 7 + 6= 17 Put 4 and 6 together to make 10. Add on 7.  Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit.	 Add together three groups of objects. Draw a picture to recombine the groups to make 10.	 Combine the two numbers that make 10 and then add on the remainder.
Count in ones and tens. Begin to partition numbers in order to add. (Represent using pictures, objects or symbols.)	 	 	53 = 50 + 3
Underlying skills • Partitioning and recombining. • Number bonds to 10. • Addition facts for all numbers up to 10 e.g. 4 + 3 = 7, 5 + 2 = 7, 6 + 3 = 9.	**Active Learning Through Models and Images** 		

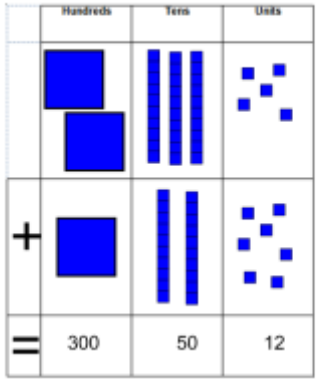
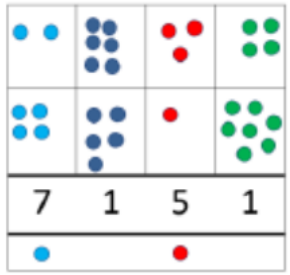
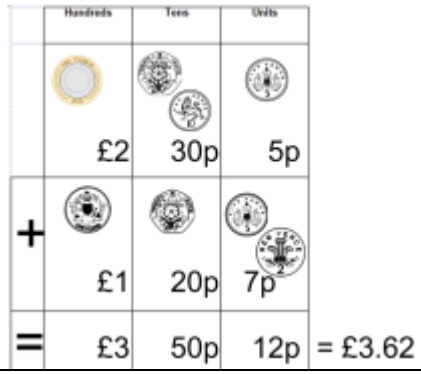
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

• Understanding that addition can be done in any order. • Find 10 more than a number. • Understand which digit changes and how place value is affected when adding ones or tens to a number.	

ADDITION STAGE 3			
Progression	**Concrete**	**Pictorial**	**Abstract**
Use partitioning to calculate TU + TU where numbers **do not bridge through ten**. (Represent using pictures, objects or symbols.) Vocabulary: estimation, approximate, inverse.	Add together the ones first, then add the tens. Use the Base 10 blocks first before moving onto place value counters.  35 + 22 = 57  24 + 15 = 39  44 + 15 = 59	After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions.  	30 + 5 +20 + 2 50 + 7 = 57

Use partitioning to calculate TU + TU where numbers **bridge through ten.** (Represent using pictures, objects or symbols.)	 35 + 27 = 62 50 + 12 = 50 + 10 + 2 = 62 (may need jottings of Dienes to represent this) Make both numbers on a place value grid.  146 + 527 Add up the units and exchange 10 ones for one 10.  146 + 527 Add up the rest of the columns, exchanging the 10 counters from one column for the next place value column until every column has been added. This can also be done with Base 10 to help children clearly see that 10 ones equal 1 ten and 10 tens equal 100.	After practically using the base ten blocks and place value counters they can move on to drawing the counters to help them solve the addition.	Start by partitioning the numbers before moving on to clearly show the exchange below the addition. 30 +5 +20 +7 50 +12 = 62 Move on to an expanded method. 35 +27 12 (5 +7) 50 (30+20) 62 Move on to fomal column addition, clearly showing the exchange below the addition: 35 +27 62 1

Underlying skills	Active Learning Through Models and Images
• Mental recall of number bonds. • Use near doubles. • Understand that numbers can be partitioned in different ways. • Being able to add multiples of 10. • Instant recall of addition facts for numbers up to 10. • Being able to add teen's numbers to multiples of 10 mentally.	$6 + 4 = 10$ $? + 3 = 10$ $25 + 75 = 100$ $19 + ? = 20$ $6 + 7 =$ double $6 + 1 = 13$ $52 = 50 + 2$ $52 = 40 + 12$ $52 = 30 + 22$  

ADDITION STAGE 4			
Progression	**Concrete**	**Pictorial**	**Abstract**
Use partitioning to calculate HTU + HTU. (Represent using pictures, objects or symbols.)	235 + 127 = 362  	Children can draw a pictoral representation of the columns and place value counters to further support their learning and understanding.  	368 +493 11 (8+3) 150 (60 +90) 700 (300 +400) 861 368 +493 861 1 1
Use partitioning to calculate decimals and money. (Represent using pictures, objects or symbols).	 	Ch can draw a representation of the money and columns to solve the addition.	£3.45 + £2.33 0.08 0.70 £5.00 £5.78
Underlying skills • Partition money into pounds and pence. • Understand £1 is the same as 100p. • Know that the hundred, tens and units and decimal point	**Active Learning Through Models and Images**		

(hundredths and tenths) should line up appropriately underneath each other. • Being able to add multiples of 10. • Count on in decimals to the nearest whole number. • Addition by counting from the largest number and using number facts e.g. 7 + 4 = 11 70 + 40 = 110	£3.61 = £3 + 60p + 1p    £ 2 3 . 5 9 + £ 7 . 5 5 £ 3 1 . 1 4 1 1 1

ADDITION STAGE 5			
Progression	**Concrete**	**Pictorial**	**Abstract**
Standard written method for TU + TU, HTU + HTU, ThHTU + ThHTU and any combination of these.			368 + 493 = 861 (1 1) 7853 + 674 = 8527 (1 1) Move on to adding more than 2 numbers.
Standard written method for adding to 2dp.			3.45 + 2.73 = 5.78 (1) Move on to adding more than 2 numbers.

Underlying skills • Use known facts to support addition. • Be able to explain the use of addition. • Bridging through 10. • Carrying through 10.	$3 + 2 = 5$ $30 + 20 = 50$ $300 + 200 = 500$ $4 + 3 = 7$ $40 + 30 = 70$ $400 + 300 = 700$		
ADDITION STAGE 6			
Progression	**Concrete**	**Pictorial**	**Abstract**
Standard written method for larger numbers, including with different numbers of digits knowing that place value columns need to be lined up.			231247 + 86726 317973 1 1 Move on to adding more than 2 numbers.
Standard written method for adding decimals with up to 3 digits after the decimal point.			3.458 +2.700 6.158 1