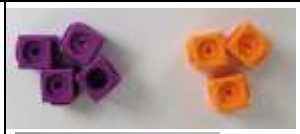
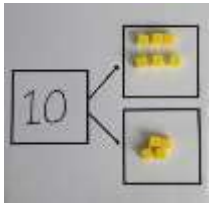
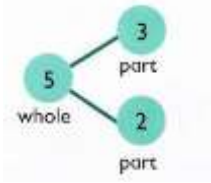
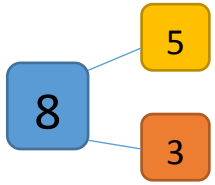
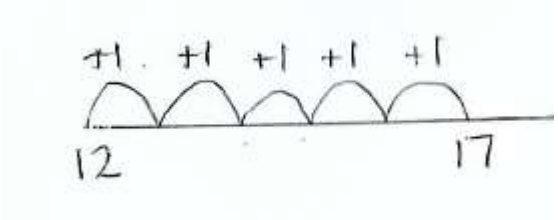
SS Peter and Paul Catholic Primary Addition Calculation Policy

	Concrete	Pictorial	Abstract
Stage 1 **(Expectation by the end of Reception/Year 1)** Children are encouraged to develop a mental picture of the number system in their heads to use for calculation. They develop ways of recording calculations using pictures Children need to be able to recall addition to 20	  Use cubes to add two numbers together as a group or in a bar. and actions for part, part whole Tens frames and numicon also used	 Use pictures to add two numbers together as a group or in a bar.	4 + 3 = 7 10= 6 + 4  Use the part-part whole diagram as shown above to move into the abstract.
Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer. Tens frames used	 Start at the larger number on the number line and count on in ones.	5 + 12 = 17 Place the larger number in your head and count on the smaller number to find your answer.

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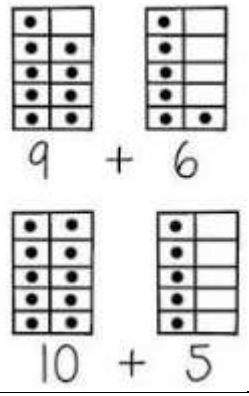
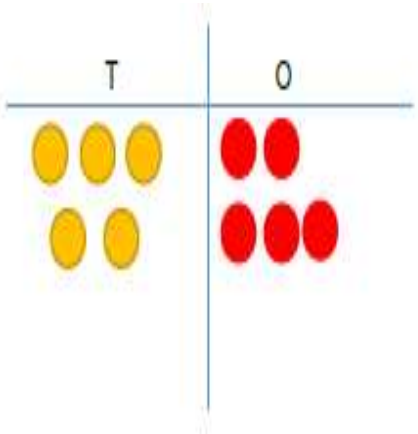
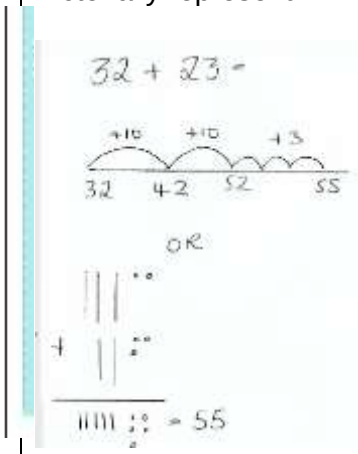
			
Stage 2 **(Expectation by the end of Key Stage 1)** **Children will begin to use 'empty number lines' themselves starting with the larger number and counting on.** **Children need to be able to partition numbers and mentally**	After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions. 	Start at the larger number on the number line and count on in ones or in one jump to find the answer. Pictorially represent. 	**32+23=** **23+13=** **12+?=21**

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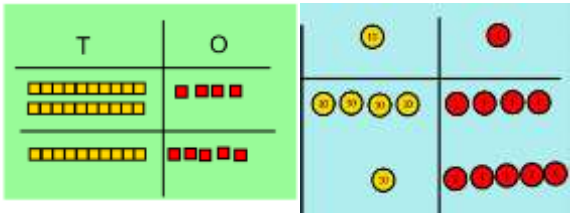
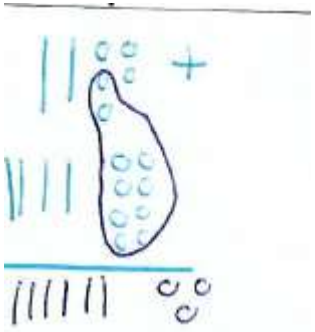
multiples of 10, 1000.			
Stage 3 (Expectation by end of lower KS2) **The expanded method can provide support with developing children's conceptual understanding. However, these are short term interim steps towards the final aim of columnar addition, which is the expectation by**	Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters. 	After practically using the base 10 blocks and place value counters, children can draw the counters or base ten to help them to solve additions. Look carefully when exchanging ten ones for a ten. 	21 + 42 = 25 + 38=

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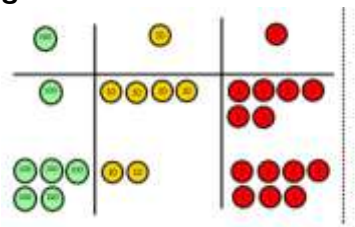
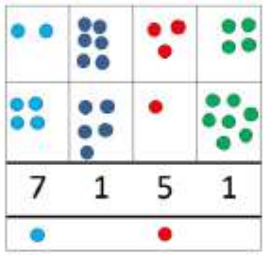
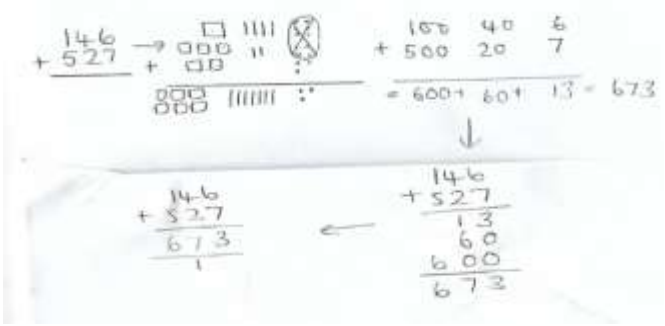
the end of year 3. Adding the least significant digits first, extending to the short method with carrying over. **Note – carried digit shown below the answer digit.** Children need to be able to mentally add larger numbers.	Make both numbers on a place value grid.  146 + 527 Add up the rest of the columns, 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.	 7 1 5 1 Children can draw a pictoral representation of the columns and place value counters or base ten to further support their learning and understanding before progressing to abstract methods. 	Start by partitioning the numbers before moving on to clearly show the exchange below the addition. 20 + 5 40 + 8 60 + 13 = 73 536 + 85 621 1 1

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Stage 4 (Expectation by end of upper KS2) Children should extend the carrying method to numbers with at least 4 digits. Begin to add two or more decimal fractions with up to four digits and either one or two decimal places.	**As the children move on, introduce decimals with the same number of decimal places and different. Money can be used here.**		72.8 + 54.6 127.4 1 1 £ 2 3 . 5 9 + £ 7 . 5 5 £ 3 1 . 1 4 1 1 1 2 3 . 3 6 1 9 . 0 8 0 5 9 . 7 7 0 − 1 . 3 0 0 9 3 . 5 1 1 2 1 2