





Addition Calculation Policy (CPA approach)





Addition Calculation Policy (CPA approach)

Using known facts	$ \begin{array}{c} \Box_{B} \Box_{B} + \Box_{B} \Box_{B} = \Box_{B} $	Children draw representations of H, T and O $\begin{array}{ccc} & + & \ddots & = & \vdots \\ & & & & \\ & & & & \\ & & & & & \\ & & & & $	3 + 4 = 7 leads to 30 + 40 = 70 leads to 300 + 400 = 700
Bar Model		7 + 3 = 10	23 25 ? 23 + 25 = 48
Add a two digit number and ones	17 + 5 = 22 Use ten frame to make 'magic ten Children explore the pattern. 17 + 5 = 22 27 + 5 = 32	Use part part whole and number line to model. 17 + 5 = 22 3 2 16 + 7 16 + 7 16 + 7 16 + 20 23	17 + 5 = 22 Explore related facts $17 + 5 = 22$ $5 + 17 = 22$ $22 - 17 = 5$ $17 - 5$ $22 - 5 = 17$
Add a 2 digit number and tens	25 + 10 = 35 Explore that the ones digit does not change	27 + 30 +10 +10 +10 27 37 47 57	27 + 10 = 37 27 + 20 = 47 $27 + \Box = 57$

St. John's CE Primary So	chool	Addition Calculation Policy (CPA approach)	
Add two 2- digit numbers	Model using dienes , place value counters and numicon	$\begin{array}{c} +20 \\ 47 \\ 67 \\ 72 \end{array} \begin{array}{c} 0r \\ 47 \\ 67 \\ 72 \end{array} \begin{array}{c} +20 \\ 47 \\ 67 \\ 70 \\ 72 \end{array} \begin{array}{c} +20 \\ 47 \\ 67 \\ 70 \\ 72 \end{array}$	25 + 47 $20 + 5$ $40 + 7$ $20 + 40 = 60$ $5 + 7 = 12$ $60 + 12 = 72$
Add three 1- digit numbers	Combine to make 10 first if possible, or bridge 10 then add third digit	Regroup and draw representation. 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 +	4 + 7 + 6 = 10 + 7 $= 17Combine the two numbers that make/bridge ten then add on the third.4 + 7 + 6 = 10 + 7$ $= 17$
<u>Year 3 –</u> Objective and <u>Strategies</u>	Concrete	Pictorial	<u>Abstract</u>



Addition Calculation Policy (CPA approach)

Column Addition—no regrouping (friendly numbers) Add two or three 2 or 3- digit numbers.	Model using dienes or numicon T O Add together the ones first, then the tens. 45 T O 34 T O 7 9 O O O O O O O O O O Value Value Value Wove to using place value counters O	tens ones Children move to drawing the counters using tens and one frame.	Add the ones first, then the tens, then the hundreds.
Column Addition with regrouping.	Tens Units 39 15 15 5 15 4 15 4 15 5 16 4 17 4 18 4 19 5 19 4 10 5 10 14 146 146 146 1527	Children can draw a representation of the grid to further support their understanding, carrying the ten underneath the line	20 + 5 $40 + 8$ $60 + 13 = 73$ Start by partitioning the numbers before formal column to show the exchange. $536 + 85$ 621 11



Addition Calculation Policy (CPA approach)

<u>Year 4,5,6 –</u> Objective and Strategies	<u>Concrete</u>	Pictorial	Abstract
Y4—add numbers with up to 4 digits	Headreds Tens Ones Image: Children continue to use dienes or pv counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand.	7 1 5 7 1 5 1 1 1 <tr< td=""><td>Continue from previous work to carry hundreds as well as tens. Relate to money and measures.</td></tr<>	Continue from previous work to carry hundreds as well as tens. Relate to money and measures.
Y5—add numbers with more than 4 digits. Add decimals with 2 decimal places, including money.	tens ones tenths hundredths Introduce decimal place value counters and model exchange for addition.	2.37 + 81.79 <u>tens ones tents hundredtts</u> 00 000 0000 00000 00000 0 0000 0 0000 00 0000 0 0000 0 0000 0 0000 0 0000 00 0000 0 0000 0 0000 0 0000 0 0000 0 0000	72.8 $f = 2 \ 3 \cdot 5 \ 9 \\ + f = 7 \cdot 5 \ 5 \\ 127.4 \\ 1 \ 1 \end{bmatrix}$

St. John's CE Primary Sc	hool	Addition Calculation Policy (CPA approach)		
Y6—add several numbers of increasing	As Year 5	As Year 5	8 1,05 9 3,66 8 15,30 1	
complexity Including			+ 20,551	
adding money, measure and				23.361
decimals with different			Insert zeros for place holders.	+ <u> </u>
numbers of decimal points.				2 1 2

This calculation policy shows some of the methods used in school. The children and teachers will also use other CPA (Concrete, Pictorial and Abstract) approaches in their lessons.