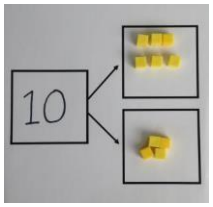
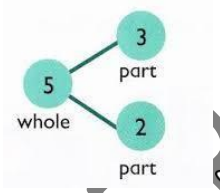
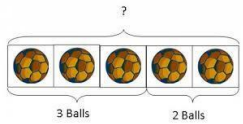
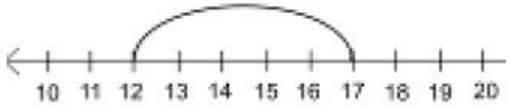
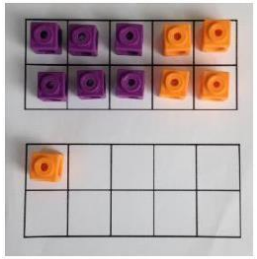
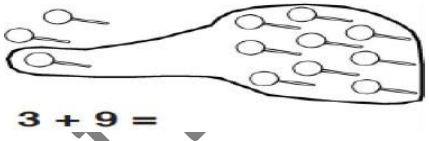
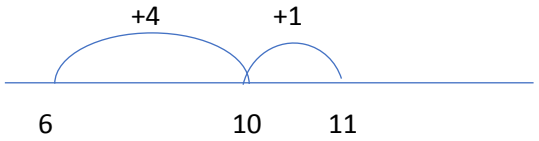
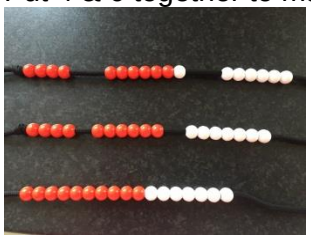
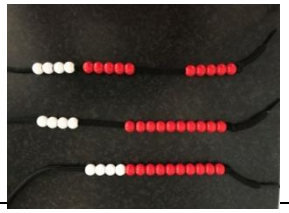
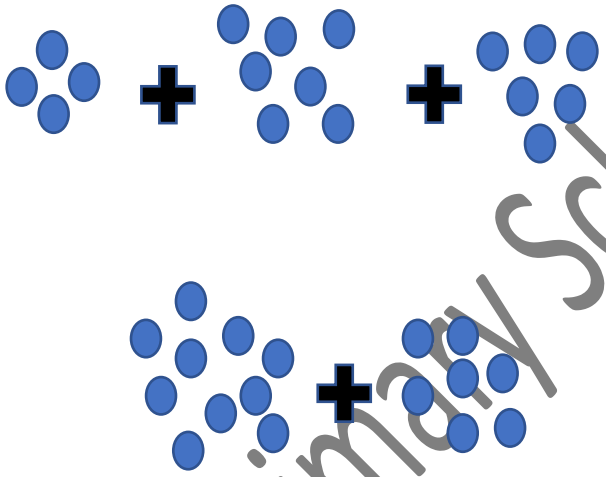
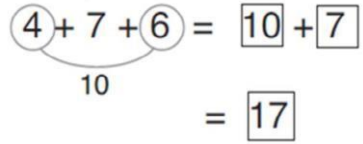
West Dean CE Primary School
Calculation Guide - Addition

Links with Subtraction are absolutely key throughout

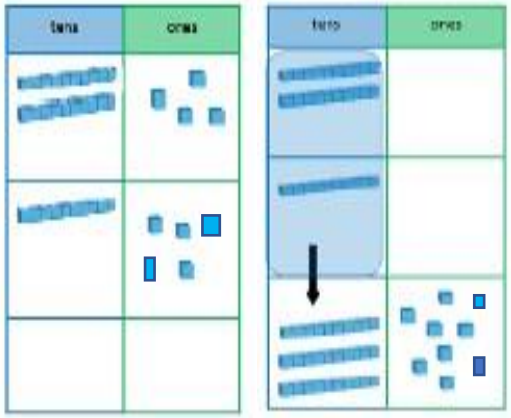
Objective and Strategies	Concrete	Pictorial	Abstract
Combining two parts to make a whole: part-whole model	  Use cubes to add two numbers together as a group or in a bar.  	 Relate addition to subtraction.  Use pictures to add two numbers together as a group or in a bar. 	4 + 6 = 10 10= 6 + 4 10 - 6=4 6=10 - 4 Relate addition to subtraction.

Starting at the number with the greater value and counting on	 Start with the number with the greatest value on the bead string and then count on to the other number, 1 by 1 to find the answer. **NB:** when counting the total, children must be taught to recognise the tens on the bead string, and then add the ones. So the answer here is 10 + 2 + 5 = 17	12 + 5 = 17  Start at the number with the greatest value on the number line and count on in ones or in one jump to find the answer.	12 + 5 = 17 5 + 12 = 17 Place the number with the greatest value in your head & count on the number with the least value to find your answer.
Regrouping to make 10.	 6 + 5 = 11  Start with the number with the greatest value and use the other number to make 10. Ten boards help with the visual concept here.	 Use pictures or a number line. Regroup or partition the number with the least value to make 10. 6 + 5 = 11  	6 + 5 = 11 If I am at six, how many more do I need to make 10. How many more do I add on now? 6 + 5 = 11 4 + 1

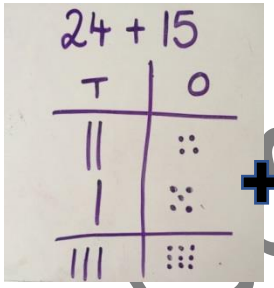
Adding three single digits	4 + 7 + 6= 17 Put 4 & 6 together to make 10. Add on 7.  Following on from making 10, make 10 with 2 of the digits (if possible) then add on the third digit. 5 + 4 + 5 = 4 + 5 + 5 + 4 + 10 = 14 	 Add together three groups of objects. Draw a picture to recombine the groups to make 10.	 Combine the two numbers that make 10 and then add on the remainder.

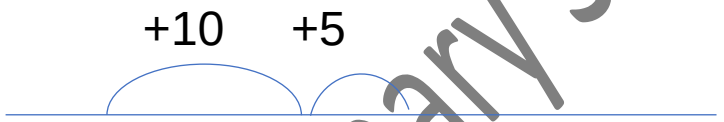
Partitioning and numberlines

24+15=

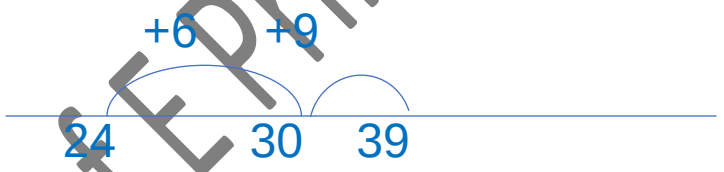


24+15

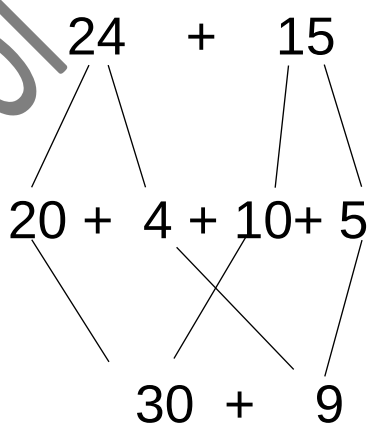




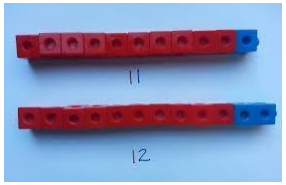
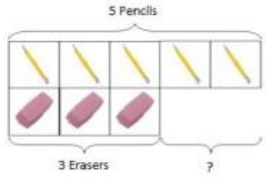
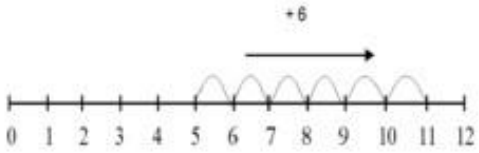
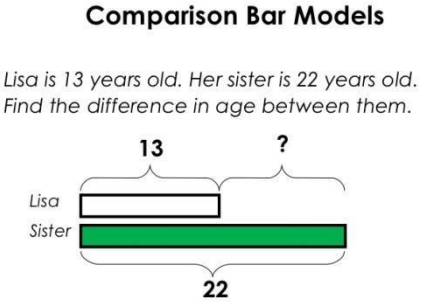
Always add the 10 first here

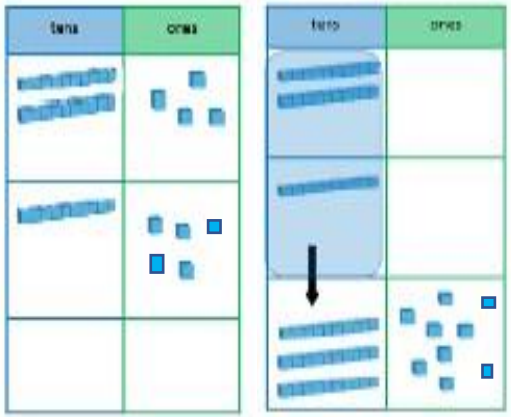
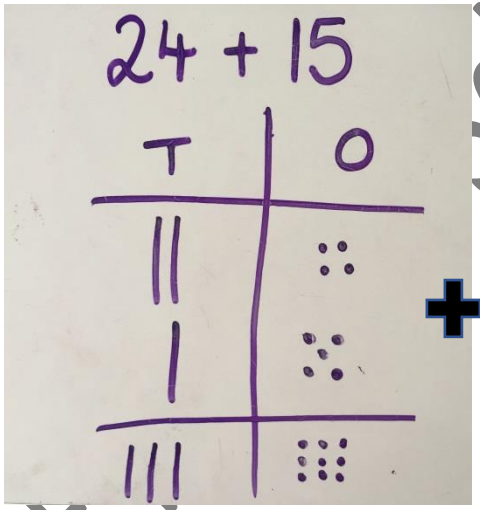


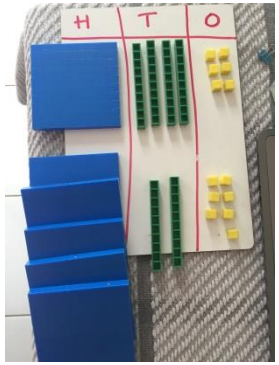
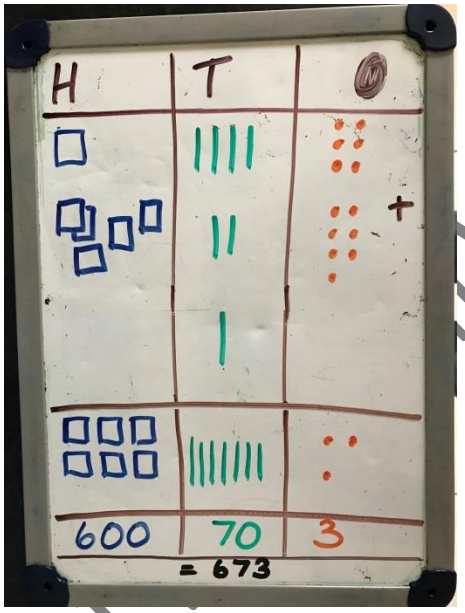
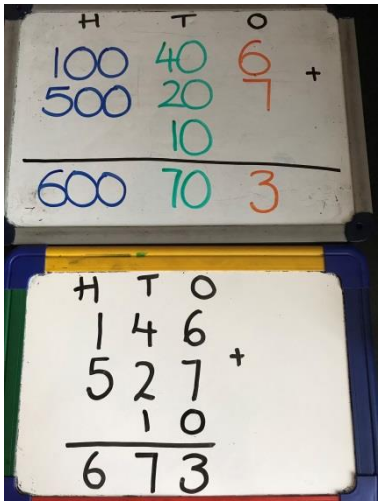
Always add to reach the10s boundary first here



24 + 15 = 39

Find the difference by finding the missing number	Compare amounts and objects to find the difference. 11 + __ = 12  Use cubes to build towers or make bars to find the difference 3 + __ = 5  Use basic bar models with items to find the difference	Count on to find the difference. 5 + __ = 11  Draw bars to find the difference between 2 numbers.  13 + __ = 22	Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches. 15 + __ = 23 This is very closely linked to finding the difference in the subtraction section of the calculation policy.

Column method- no regrouping (exchanging)	24 + 15= Add together the ones first then add the tens using the Deines. 	After practically using the Deines, children can draw the Deines to help them to solve additions. 	**Stage 1** 24 + 15 T 0 20 + 4 10 + 5 30 + 9 **Stage 2** 24 15+ 39

Column method- regrouping with 2 and 3 digit numbers	Make both numbers on a place value grid. 146+527  Add up the units and exchange 10 ones for one 10.  Add up the rest of the columns, exchanging where needed. Once the children are secure with this, the principle can be applied to bigger numbers and decimals.	Children can draw a pictorial representation of the columns.  600 70 3 =673	Start by partitioning the numbers before moving on to clearly show the exchange below the addition. (no column headings needed)  As the children move on, introduce decimals with attention to place value zeros.