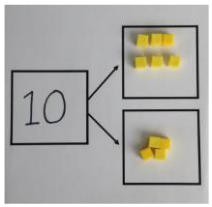
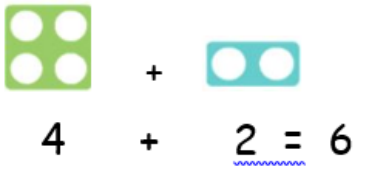
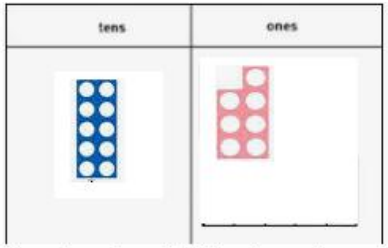
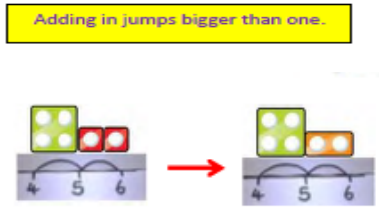
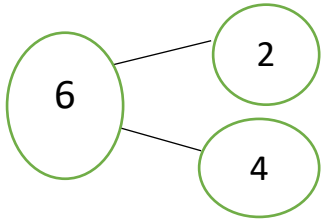
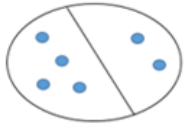
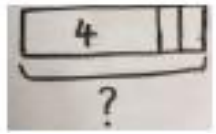
EYFS Addition

Strategies -

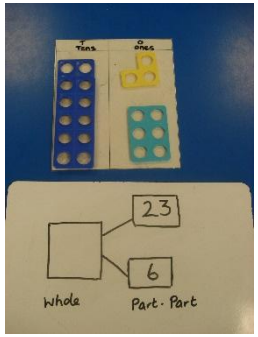
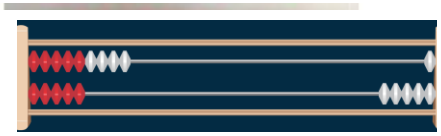
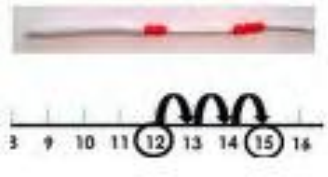
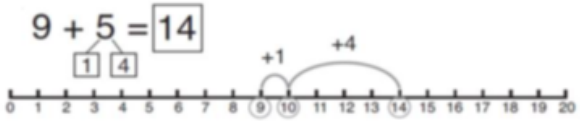
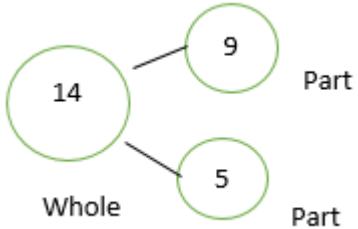
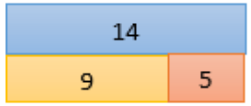
Early Learning Goal: Children to count reliably with numbers one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit number and count on or back to find the answer.
Count on from the first group to add two groups of objects.

Language	Concrete	Pictorial	Abstract
Plus Add More Total Altogether Make How many more…?	   Use cubes and Numicon to add two numbers together as a group or in a bar.    Show the value of digits using a place value grid	   Children can use resources to show number values.   	Children will annotate concrete and pictorial images with numerals as they develop this skill. To support the recording of maths number stories will form an integral part of the teaching of maths. Children will then have an opportunity for independent recording at the maths writing table.

1 Addition

National Curriculum

- Read, write and interpret mathematical statements involving addition (+) and equals (=) signs – This means the same as – relate this to balance number sentences and scales.
- Represent and use number bonds and related subtraction facts within 20.
- Add one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems such as 9 = ☐ + 7

Vocabulary	Concrete	Pictorial	Abstract
Number bonds Number line Add Addition More Plus Make Sum Total Altogether Equals How many more? How many more is …. than …. Part/Whole Commutative Law	 Using Numicon to investigate the creation of 10 and above. First steps to bridging.  9+5 =14  Start with the bigger number (9) add to make 10 (1), then add the remaining smaller number (4) 	Counting on: Learning that starting from the larger number is more efficient 15 = 12 + 3  **The Power of 10** :Use pictures or a number line. Regroup or partition the smaller number to make 10.    **Part-Part Whole** Use this, as a way of showing addition is commutative: 9+5 = 14 5+9 = 14 Progress to show = means the same as and move the = symbol ? = 6+3	**17 = 5 + 12** Place the larger number in your head and count on the smaller number to find the answer. **7 + 4 =11** If I am at seven, how many more do I need to make 10. How many more do I add on now? **5 + 9 = 14** **9 + 1 = 10** **10 + 4 = 14** If I have nine, how many more do I need to make 10? How many more do I add on now? Commutative Law – Addition can be done in any order 15 + 1 = 1 + 15

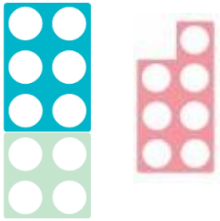
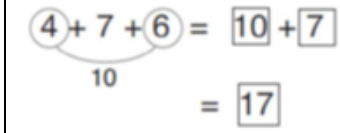
Year 2 Addition

National Curriculum:

Solve Problems with Addition:

- Using concrete objects and pictorial representations, including those involving number, quantities and measures
- Applying their increasing knowledge of mental and written methods
- Recall and use addition facts to 20 fluently, and derive and use related facts up to 100
- Add numbers using concrete object. Pictorial representation, and mentally, including:
- A two digit number and ones
- A two digit number and tens
- 2 two digit numbers
- Adding 3 one digit numbers
- Show the addition of two numbers can be done in any order (commutative) and subtraction from one number from another cannot.
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations, and solve missing number problems.

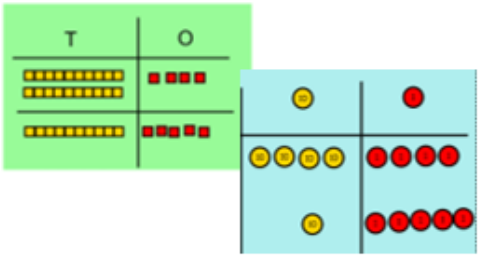
Adding 3 single digit numbers

Vocabulary	Concrete	Pictorial	Abstract
Add Addition More Plus Make Sum Total Altogether Equals Is the same as Tens boundaries Number Line Part/Whole Bar Model Expanded Place Value column Operation Symbols Commutative Law	4 + 7 + 6 = 17 Put 4 and 6 together to make 10. Add on 7.  4+6 + 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.

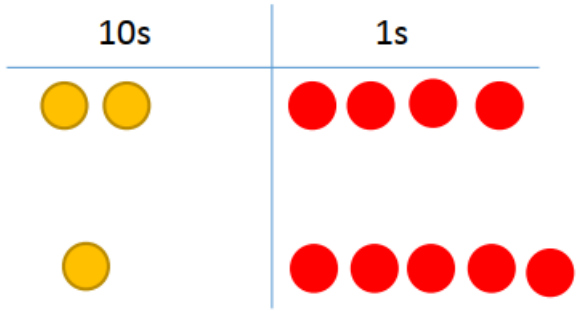
Adding two 2 digit numbers up to 100 without regrouping

Use manipulatives to secure understanding of crossing 10's boundaries.

24 + 15 =
Add together the ones first then add the tens.
Use dienes first before moving onto place value counters



After physically using the dienes and place value counters, children can draw the counters to help them solve additions.



Year 2: Partition and Expanded method

T O T O
44 + 15
40 4 10 5

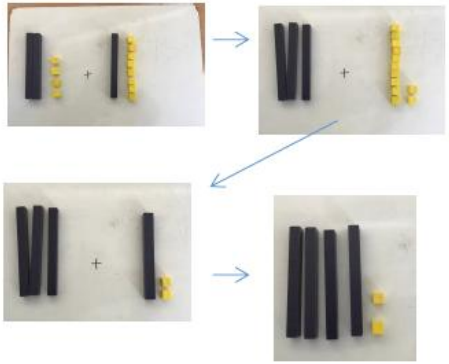
40 4
+ 10 5
50 9

Not crossing 10's boundaries

Adding two 2 digit numbers up to 100 with regrouping

Use manipulatives to secure understanding of crossing 10's boundaries.

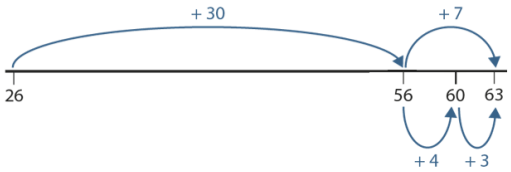
24 + 18 = 42
Add together the ones first then add the tens.
Develop to include regrouping.



= £63

26	37

26 + 37 =26 + 30 + 7= 63



Year 2: Partition and Expanded method – crossing 10's

Year 2: Expanded and column methods to add 2 digit numbers bridging 10

T O T O
26 + 18
20 6 10 8

20 6
+ 10 8
40 4
10

Year 2: Partitioning both addends

26 + 37
20 6 30 7

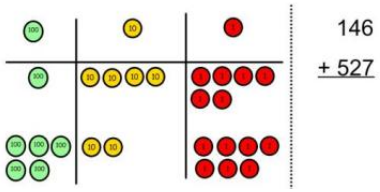
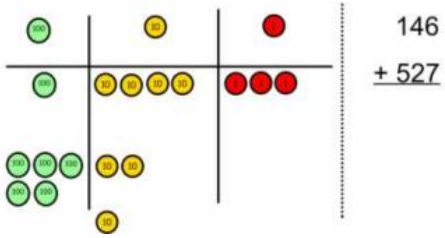
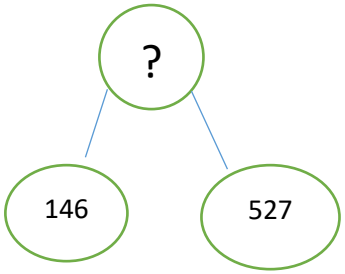
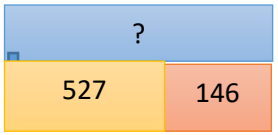
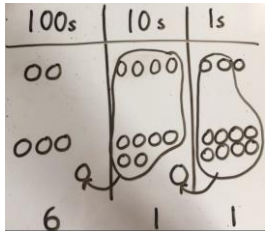
20 + 30 = 50
6 + 7 = 13
50 + 13 = 63

Year 3 Addition

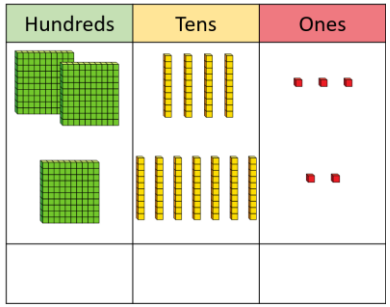
National Curriculum

Pupils should be taught to:

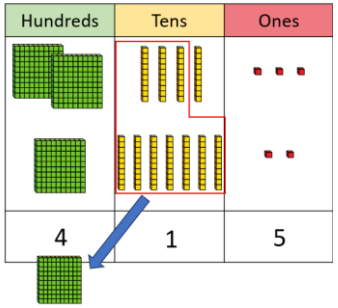
- Add numbers mentally including
- A 3 digit number and ones
- A 3 digit number and tens
- A 3 digit number and hundreds
- Add numbers up to 3 digit using formal written methods- column addition
- Estimate the answer to a calculation and use inverse operation to check answers
- Solve problems including missing number problems using number facts, place value and more complex addition

Vocabulary	Concrete	Pictorial	Abstract
	Add 3 digit numbers with regrouping		
Addition / Add Plus/ More Sum/ Total/ Make Double Near Double Addend One more Ten more Hundred more How many more to make…. How many more is … than… How much more is… Tens boundary Hundreds boundary Equals same as Operation sign Mental Calculation Equation Number Sentence Increase Greater than	Make both numbers on a place value grid with regrouping  146 + 527 Begin in the ones column. For every 10 created exchange for a 10 counter.  146 + 527	  The part whole model and the bar model are used to reinforce the relationship between the Whole and the two parts. Addend + Addend = Sum Children also move from the manipulatives to drawing their own representations on a place value grid. Children to represent the counters in a place value chart, circling when they make an exchange.  	Expanded Written Method Leading to formal compact column method. Note that place value headings must be shown in compact method. H T O 1 4 6 + 5 2 7 6 7 3 1

243 + 172 =

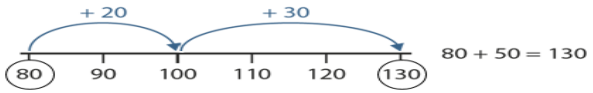


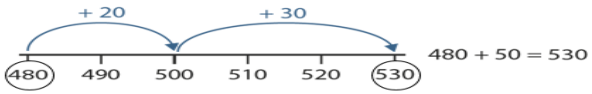
243 + 172 = 415



Dienes and Base Ten can also be used show making 10, 100, 1000.

Number Lines to aid fluency





Children to make the next 10 or 100 depending on context.

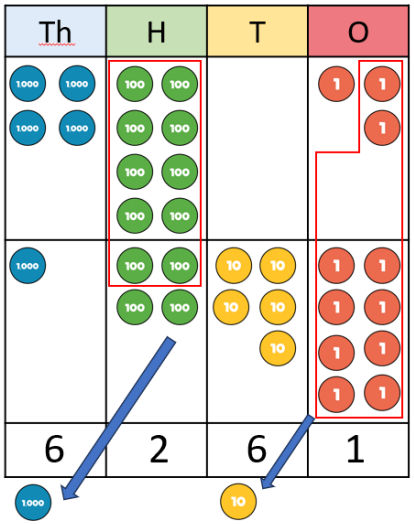
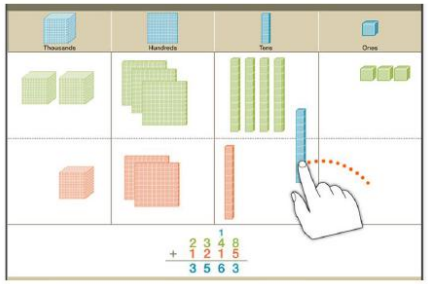
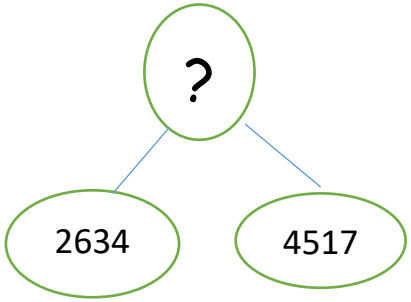
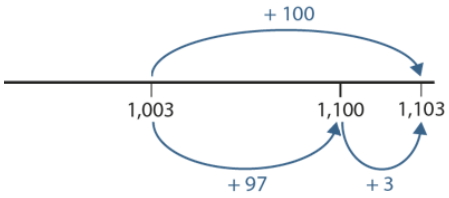
	H	T	O	
	2	4	3	
+	1	7	2	
	4	1	5	
	1			

Year 4 Addition

National Curriculum

Pupils should be taught to

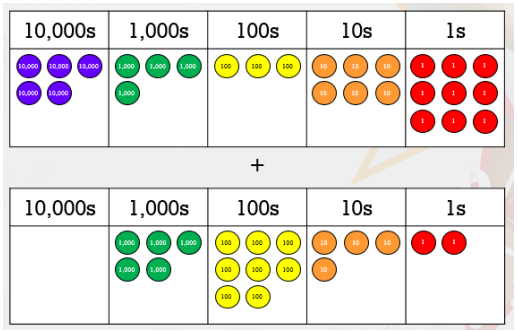
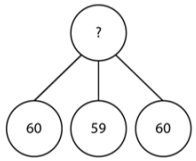
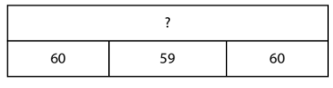
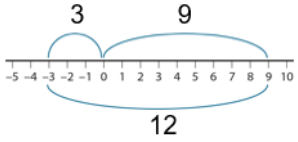
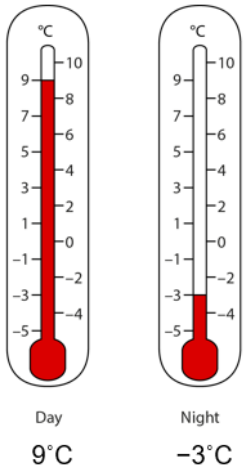
- Add with up to 4 digits using the formal written methods of column addition and subtraction where appropriate.
- Estimate and use inverse operations to check answers to a calculation
- Solve addition two step-word problems in contexts, deciding which operations and methods to use and why.

Vocabulary	Concrete	Pictorial	Abstract
See year 3 Include place value of thousands. Include Tenths and Hundredths.	  Use concrete materials to support conceptual understanding. Place value counters and frames are adapted to incorporate decimals.	 1,003 + 100= 1,103 Children to be able to record pictorially  Use of number lines to promote fluency and consolidation of place value.	Formal Compact Column Method. 4803 + 1458 6261 1 1

Year 5 Addition

National Curriculum

- Add whole numbers with more than 4 digits, inlcuding using column addtion where appropriate.
- Add numbers mentally with increasingly large numbers
- Use rounding to ceck ansers to calculations and determine, in the context of a problem, levels of accuracy
- Solve addition multi-step problems in context, deciding which operations and methods to use and why.

Language	Enactive	Iconic	Symbolic
See previous years.		    Number lines still have a place to promote fluency.	38,401 + 2,617 = 3 8 4 0 1 + 2 6 1 7 4 1 0 1 8 1 1 The use of place value headings is at the teacher's discretion.

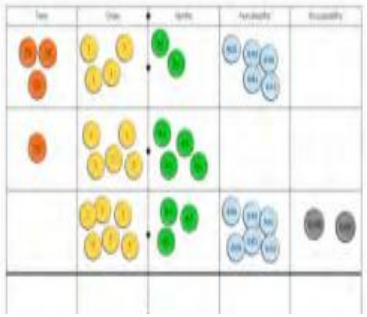
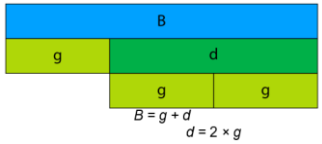
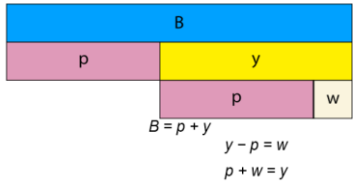
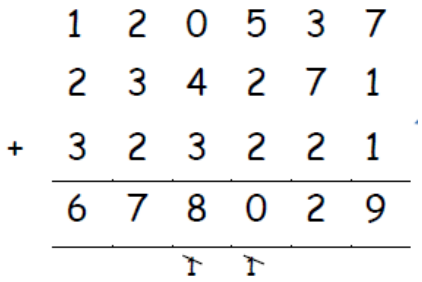
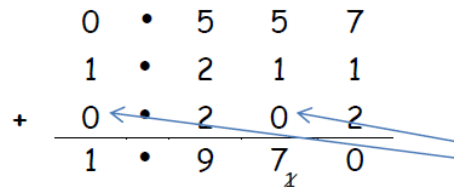
Year 6 Addition

National Curriculum

Pupil should be taught to:

- Solve addition multi-step problems in contexts, deciding which operations and methods to use and why.

Pupils should build on Year 5 strategy for addition when adding more than two numbers including numbers to three decimal places.

Language	Enactive	Iconic	Symbolic
When working with larger numbers model the correct placement of the comma: 1,678,029 Check children can confidently read these numbers		See previous years for iconic representations.  $B = r + b$ Two unknowns; several solutions: I am thinking of two rods that together are equivalent to blue. What are they?  $B = g + d$ $d = 2 \times g$ *Two unknowns: one solution (multiplicative relationship between the unknowns): I am thinking of two rods that together are equivalent to blue. One is twice as long as the other. What are they?*  $B = p + y$ $y - p = w$ $p + w = y$ *Two unknowns; one solution (additive relationship between the unknowns): I am thinking of two rods that together are equivalent to blue. There is a difference of white between the two rods. What are they?*	  Note in the example, the use of '0' as a place value holder here and as a digit within the decimal number itself: to reiterate the understanding of its importance and 'value'.