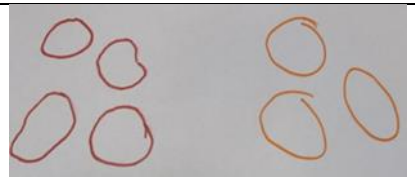
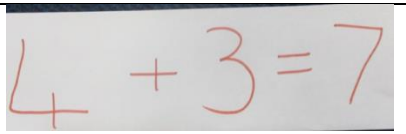
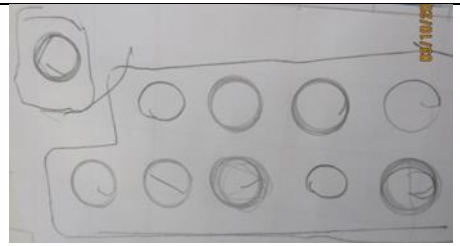
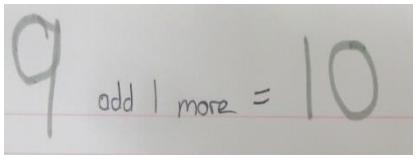
St William's Catholic Academy:
Calculation Guidance For Addition and Subtraction
(Last Review: Summer Term 23)

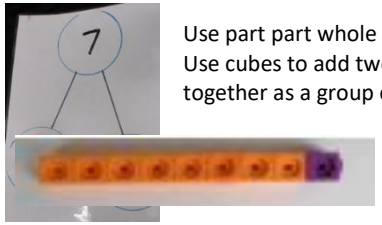
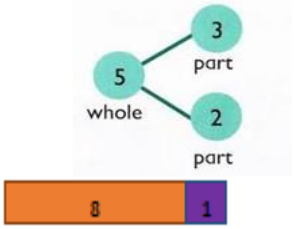
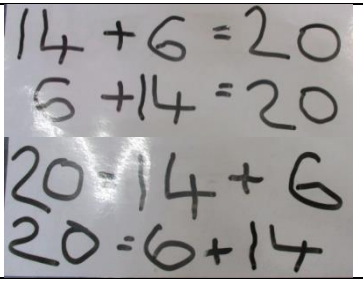
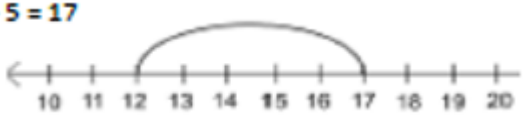
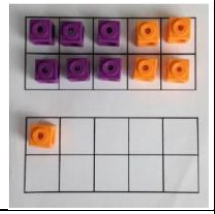
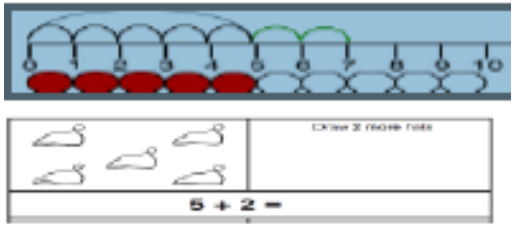
	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	Addition Use quantities and objects to add two single digit numbers and count on to find the answer One more Begin to use appropriate vocabulary	Regrouping to make 10 using 10 frames. Starting at the bigger number and counting on using concrete materials Combining two parts to make a whole: part whole model Represent and use number bonds to 20.	Combine two numbers Use known facts Adding 3 single digits Adding set of 10. Bar Model Add a 2-digit number and ones, two 2-digit numbers. 3 1-digit numbers	Add numbers mentally up to three digits Add numbers with up to three digit using a formal column method Column addition without regrouping. Column addition with regrouping. Use inverse operations to check answers	Add numbers with up to four digits using formal methods Estimate and use inverse to check calculations Solving addition two-step problems in context. **Column addition regrouping.**	Add whole numbers with more than four digits using formal methods Add numbers mentally with increasingly large numbers Use of place value counters for adding decimals. **Column addition regrouping**.	Using knowledge of the order of operations to carry out calculations involving all four operations Use of place value counters for adding decimals Abstract methods **Column addition regrouping.**
	Key language: sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.						
	Subtraction Use quantities and objects to subtract two single digit numbers and count back to find the answer One less Taking away ones Begin to use appropriate vocabulary	Subtract one and two digit numbers to 20 using 10 frames Starting at the bigger number and counting back using concrete materials Taking away ones Find the difference Introduce Pictoral method: Part part whole, Make 10 and Bar Model	Subtract two numbers Regroup a ten into ten ones. Partition to subtract without regrouping.	Subtract numbers mentally up to three digits Subtract numbers with up to three digit using a formal column method. Column subtraction without regrouping. Column subtraction with regrouping. Use inverse operations to check answers	Subtract numbers with up to four digits using formal methods Estimate and use inverse to check calculations **Column subtraction include regrouping.**	Subtract whole numbers with more than four digits using formal methods Subtract numbers mentally with increasingly large numbers **Column subtraction include regrouping.**	Using knowledge of the order of operations to carry out calculations involving all four operations **Column subtraction include regrouping.**
	Key language: take away, less than, the difference, subtract, minus, fewer, decrease.						

Addition Guidance

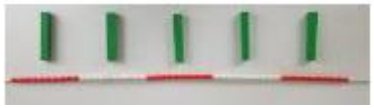
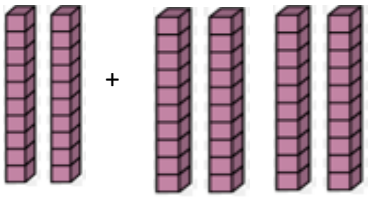
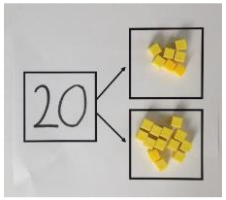
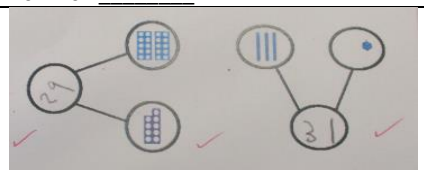
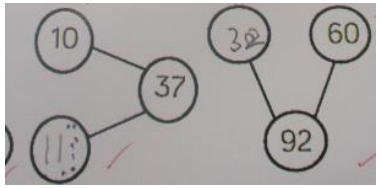
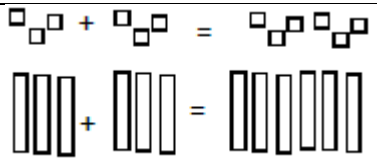
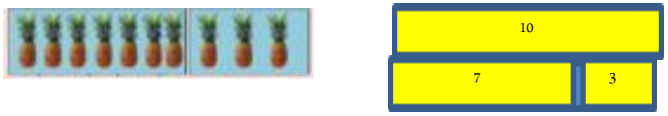
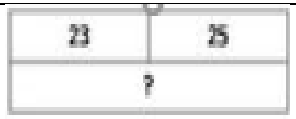
EYFS

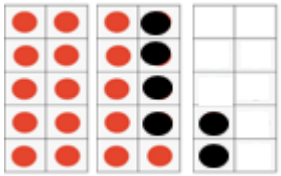
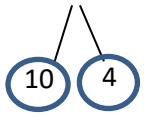
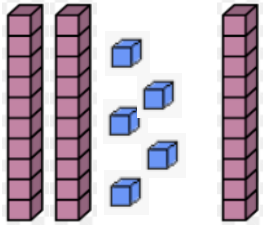
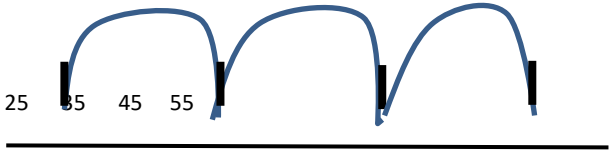
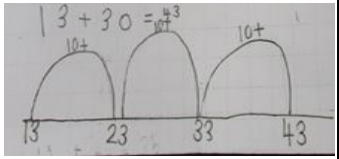
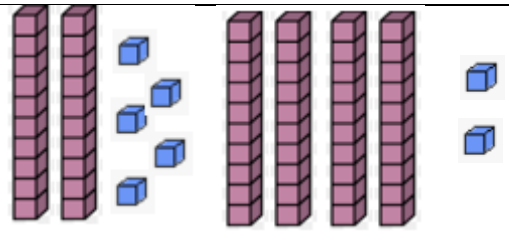
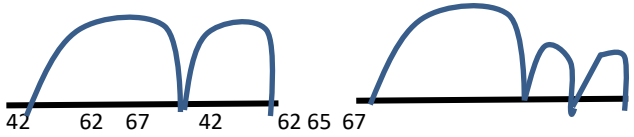
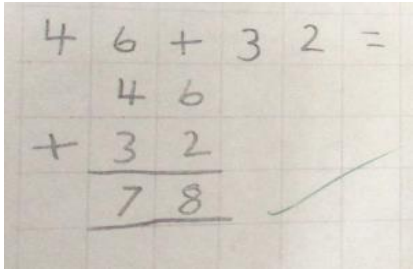
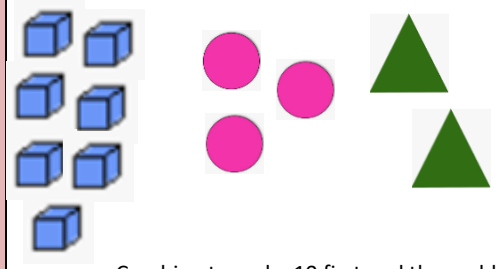
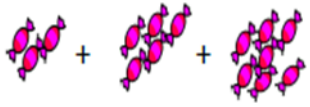
Objective & Strategy	Concrete	Pictorial	Abstract
Use quantities and objects to add two single digit numbers and count on to find the answer.	'Four toys and I add three toys... how many altogether'	 Draw a representation of each number and group together	 Starting to form number sentences
One more.	9+1 'Nine toys and one more makes 10'	 Draw a representation of each number and group together	
The introduction and use of appropriate vocabulary is important at this stage.			

Y1 ADDITION

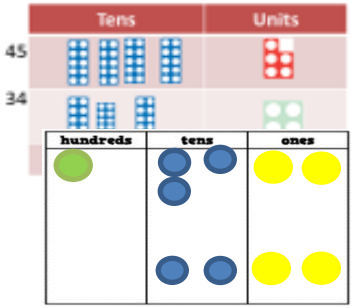
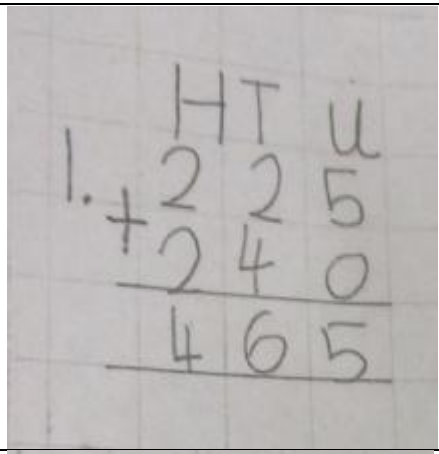
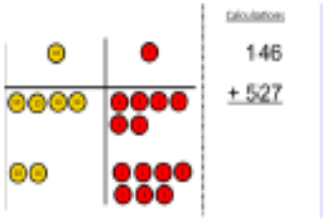
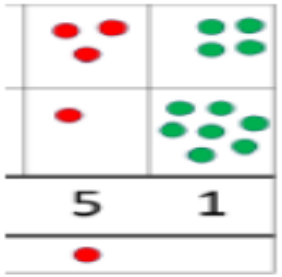
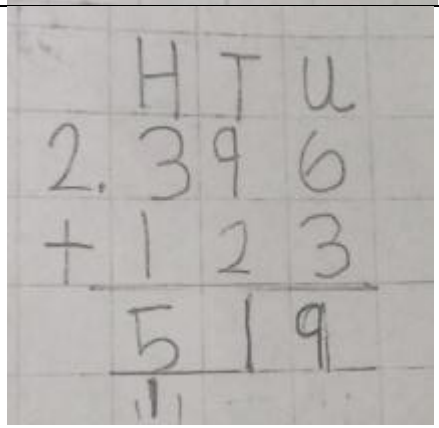
Objective & Strategy	Concrete	Pictorial	Abstract
Combining two parts to make a whole: part- whole model.	 Use part part whole model (left) Use cubes to add two numbers together as a group or in a bar.	Use pictures to add two numbers together as a group or in a bar. 	
Starting at the bigger number and 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 the larger number in your head and count on the smaller number to find your answer.
Regrouping to make 10. **This is an essential skill for column addition later.**	Start with the bigger number and use the smaller number to make 10. Use ten frames. 	Use pictures or a number line. Regroup or partition the smaller number using the part part whole model to make 10.	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?
Represent & use number bonds and related subtraction facts within 20.	2 more than 5.		Emphasis should be on the language ‘1 more than 5 is equal to 6.’ ‘2 more than 5 is 7.’ ‘8 is 3 more than 5.’

Y2 ADDITION

Objective & Strategy	Concrete	Pictorial	Abstract
Adding multiples of ten.	 Using dienes, Base 10, bead strings or equivalent to model units of 10 addition	 2tens+4tens =_____ 20 + 40 =_____	20 + 40 = 60 70 = 50 + 20 40 + ☐ = 90
Use known number facts. Part part whole.	 Children explore ways of making numbers within 20 with apparatus.	 Numbers split into Tens (part) and Ones (part) with pictures to make the whole number.	Begin to link part, part whole to number sentences.  20 – ☐ = ☐ ☐ + ☐ = 20
Using known facts.	 3 ones + 3 ones = 6 ones 3 tens + 3 tens = 6 tens (make links)	Children draw representations of tens and ones 	4 + 5 = 9 Leads to 40 + 50 = 90 Leads to 400 + 500 = 900
Bar model.			 23 + 25 = 48

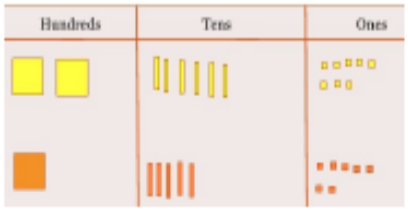
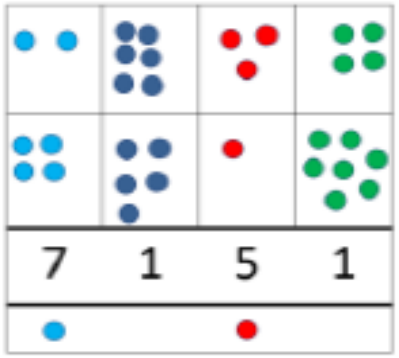
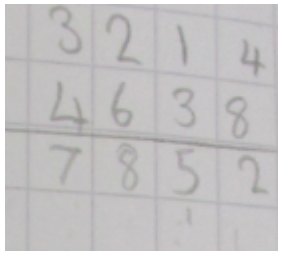
	3 + 4 = 7	7 + 3 = 10	
Add the following: a 2-digit number and ones.	 16 + 5 = 21 Children explore the pattern. 16 + 6 = 21 26 + 6 = 31	14 + 5 = 19  Add the ones: 4 + 5 = 9 Add the tens to the ones: 10 + 9 = 19 Use part whole model and number line to model.	Explore related facts. 16 + 5 = 21 5 + 17 = 21 21 – 5 = 16 21 – 16 = 5
Add a 2-digit number and tens.	 25 + 10 = 35 Explore that the ones digit does not change.	Number Lines are encouraged 25 + 30 +10 +10 +10 	36 + 10 = 47 36 + 20 = 57 36 + = 67 
Add two 2-digit numbers.	 Model using place value counters, dienes or numicon.	+ 20 + 5 +20 +3 +2  Use number line and bridge ten. Use part whole where necessary.	 (Introduced Summer Term only)
Add 3 1-digit numbers.	 Combine to make 10 first and then add third digit.	 Regroup and draw representations. 	3 + 5 + 7 = 10 + 5 10 10+5=15 Combine the 2 numbers that make/bridge 10 then add the third.

Y3 ADDITION

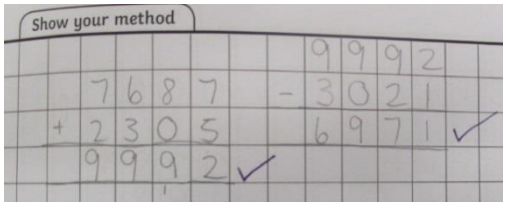
Objective & Strategy	Concrete	Pictorial	Abstract
Column Addition— no regrouping. (friendly numbers) Add two or three 2 or 3-digit numbers.	Add together the ones first then the tens.  132 + 22	Children move to drawing the counters using a tens and one frame. 	
Column addition with regrouping.	 Exchange ten ones for a ten. Model using apparatus (e.g. numicon and counters)	Children can draw a representation of the grid, to support understanding, carrying the ten.  	
Mental methods should include increasingly large numbers, fractions and decimals. Modelling, including bars and number lines can support these methods.			

Y4 ADDITION

<table>
<tr><th>Objective & Strategy</th><th>Concrete</th><th>Pictorial</th><th>Abstract</th></tr>
<tr><td>Add numbers with up to four digits using formal methods.</td><td rowspan="2">Children continue to use apparatus to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand

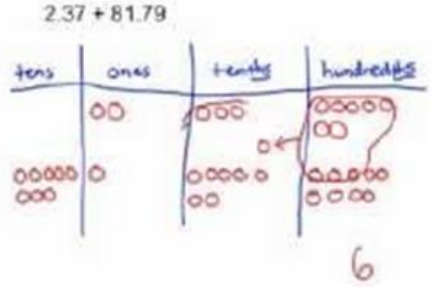
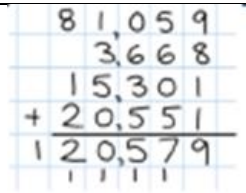
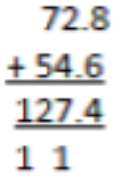
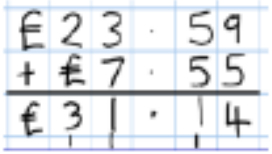
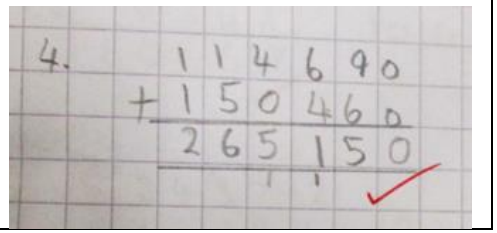
  </td><td rowspan="2">  </td><td rowspan="2"> 
Continue from previous year groups.

Relate to money and measures

  </td></tr>
<tr><td>Column Addition with regrouping.

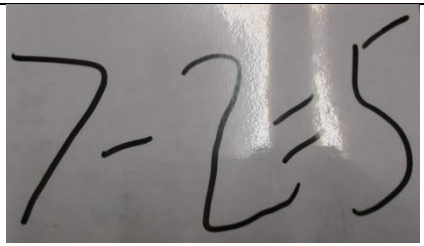
Solving addition two-step problems in context choosing appropriate operations.</td></tr>
<tr><td colspan="4">Estimate and use inverse to check calculations.</td></tr>
</table>

Y5 AND Y6 ADDITION

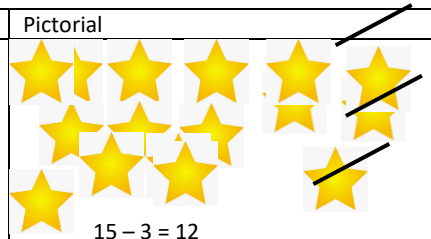
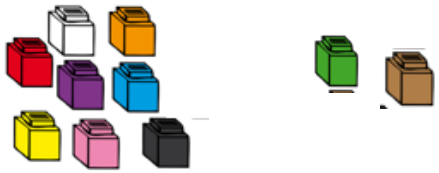
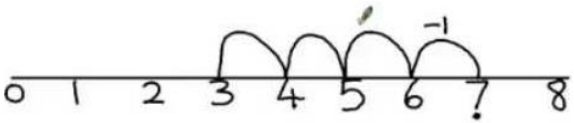
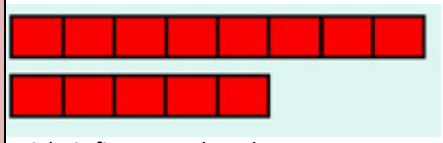
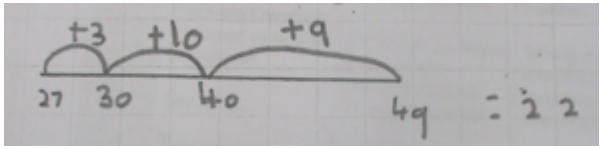
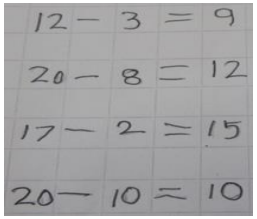
Objective & Strategy	Concrete	Pictorial	Abstract
Add numbers with more than 4 digits. Add decimals with 2 decimal places, including money. Column Addition with regrouping.	Continue to use apparatus and practical resources – e.g. place value cards As year 4 Introduction of decimals and model exchange for addition	 	 Insert zeros for place holders.   

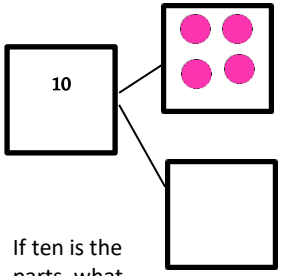
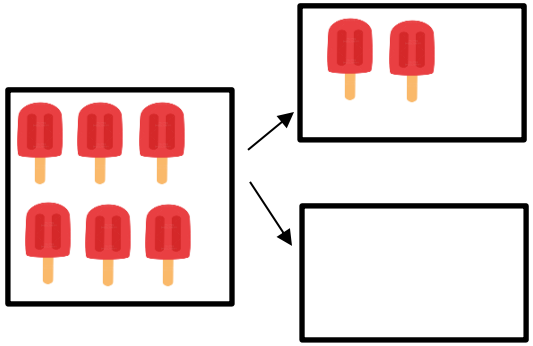
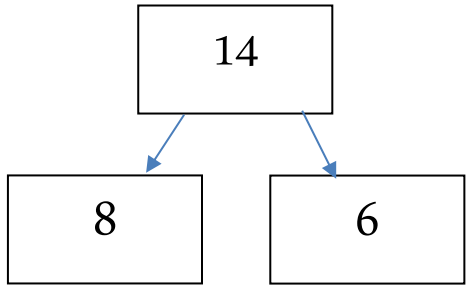
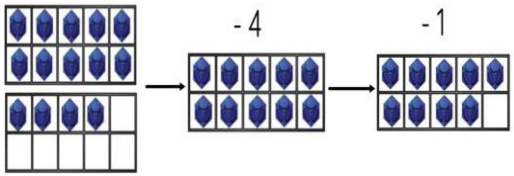
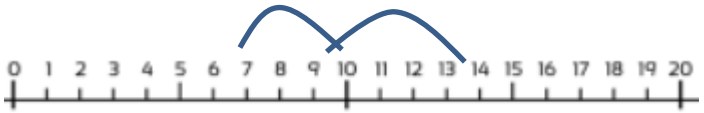
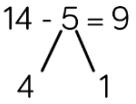
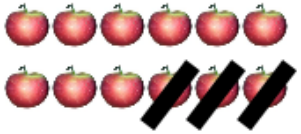
Subtraction Guidance

EYFS SUBTRACTION

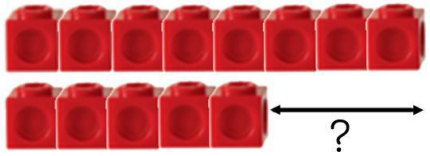
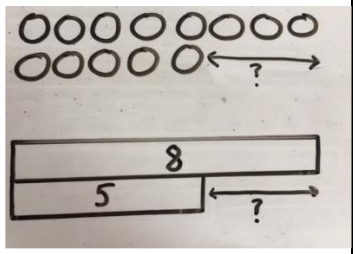
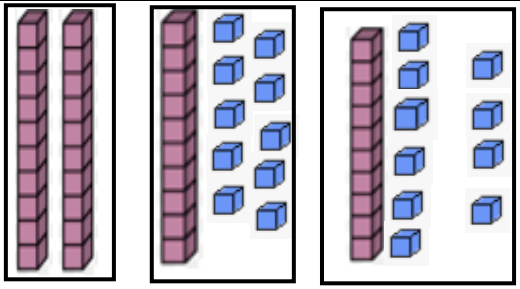
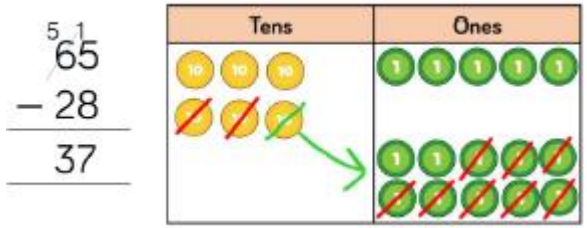
Objective & Strategy	Concrete	Pictorial	Abstract
Use quantities and objects to subtract two single digit numbers and count back to find the answer.	"7 animals but 2 birds flew away. So now I have 5."	Draw a representation of each number and cross two off.	 Starting to form number sentences
One less/Taking away ones.	"I have 8 rocks and I take one away. Got 7."	Use pictures and cross out one picture.	8-1=7 Starting to form number sentences
The introduction and use of appropriate vocabulary is important at this stage.			

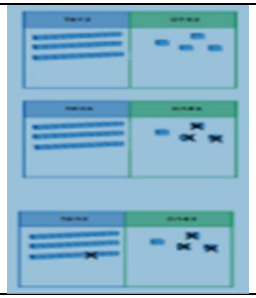
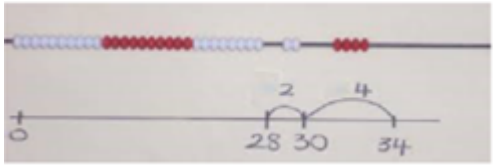
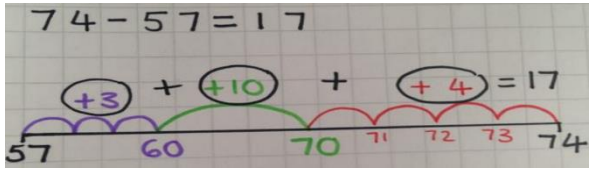
Y1 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Taking away ones.	Use physical objects, counters, cubes etc to show how objects can be taken away. (See early years subtraction) 4- 2 = 2	 15 – 3 = 12 Children cross out the objects to show what has been taken away.	4 – 2 = 3 15 – 3 = 12
Counting back.	 Move objects away from the group, counting backwards.	Count back in ones using a numberline. 7 – 4 = 3 	Put 12 in your head and count back 3. What number are you on? Jack has 15 pencils he gives 5 away. How many does he have left over?
Find the difference.	Compare objects and amounts.  8 3 Eight is five more than three.	Count on using a number line to find the difference.  Begin to encourage children to use an empty number line to support abstract concepts.	Lucy has 12 sweets and her sister has 5. How many more does Lucy have than her sister? 

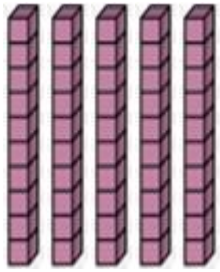
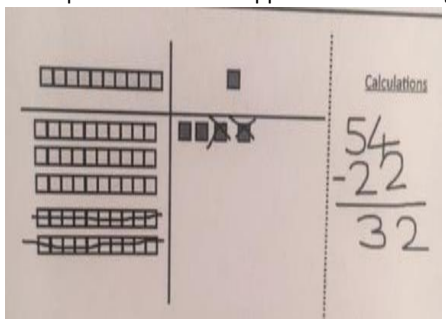
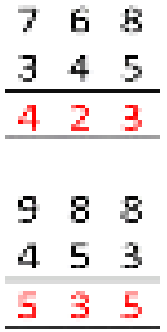
Represent and use number bonds and related subtraction facts within 20. Part Part Whole Model.	 If ten is the parts, what whole and 6 is one of the is the other part?		Move to using numbers within the part whole model. 
Make 10.	 Make 14 on the 10 frame. Take 4 away to make 10, take one more so you have taken 5. **14 – 5 = 9**	14 – 7 = 7 Jump back 4 first, then another 3. Use 10 as a stopping point. -3 -4 	 14 – 4 = 10 10 – 1 = 9 16 -8. How many do we take off first to get to 10? How many left to take off?
Bar Model.	I have 12 apples and I eat 3. How many would I have left? 		 10 = 8 -2 10 = 2- 8 10 -2 = 8 10 -8 = 2

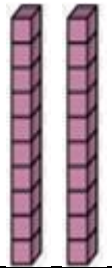
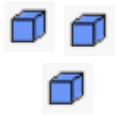
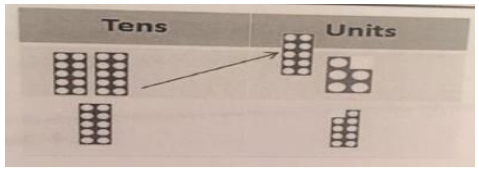
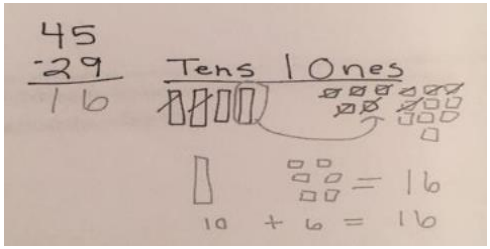
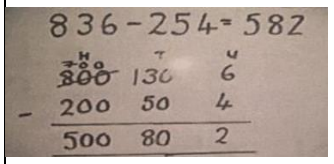
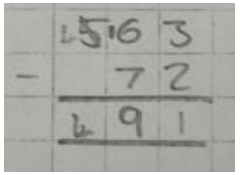
Y2 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Subtract one or two numbers (upto 100)	 8-5=	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate. 	Find the difference between 8 and 5. 8 – 5, the difference is Children to explore why 9 - 6 = 8 – 5 = 7 – 4 have the same difference. 8 – 5 = 3
Regroup a ten into ten ones.			

Partition to subtract without re-grouping.	34 – 13 = 21 Use dienes/ Base 10 to show how to partition the number when subtracting without re-grouping. 	Children draw representations of Deines and cross off. 43 – 21 = 22	At this stage, encourage children to use formal method alongside using equipment (such as Base 10, straws or Place Value Counters) Begin to model how some equipment, like straws, become less efficient methods with larger numbers.
Make 10 strategy. Progression could be crossing one ten, crossing more than one ten, crossing the hundreds.	Use a bead or bar bead strings to model counting to next ten and the rest. 	 Use a number line to count on to the next ten and then the rest.	
Recognise inverse operations			

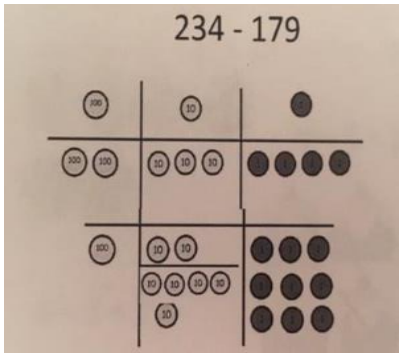
Y3 SUBTRACTION

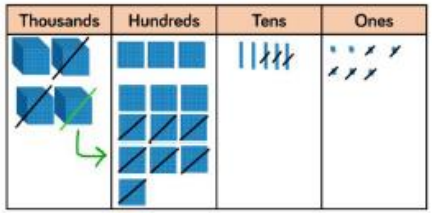
Objective & Strategy	Concrete	Pictorial	Abstract
Column subtraction without regrouping.	 apparatus from group Remove concrete	Draw representations to support understanding. 	

	58 -23 = Use or base model.   numicon 10 to		
Column subtraction with regrouping.	 Begin with Base 10 or Numicon. Move onto place value counters, modelling the exchange of a ten into ones.	 Children may draw representations to support their understanding.	 Begin by partitioning into place value columns. Then move to formal method. 
Use inverse operations to check answers			

Y4 SUBTRACTION

Objective & Strategy	Concrete	Pictorial	Abstract
Subtracting tens and ones. Subtract numbers with up to four digits using formal methods. **Column subtraction with regrouping.**	Base 10 and Place Value counters most effective manipulatives for subtracting numbers upto 4-digits	Children can draw place value equipment to show their exchange. As Year 3.	Ensure that children write the calculation alongside any concrete resources so they can see the links to the written column method.

<table>
<tr>
<td>Introduce decimal subtraction through context of money.</td>
<td>


4,357 – 2,735 = 1,622


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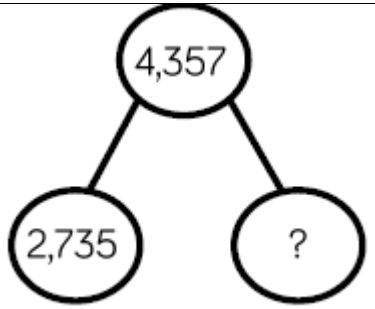

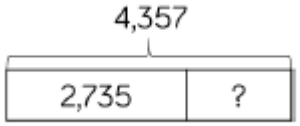

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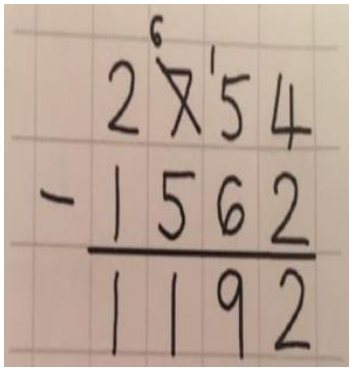
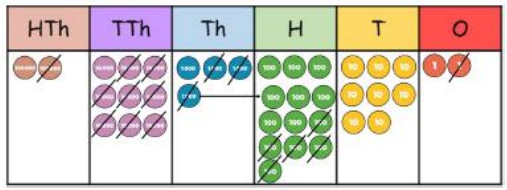


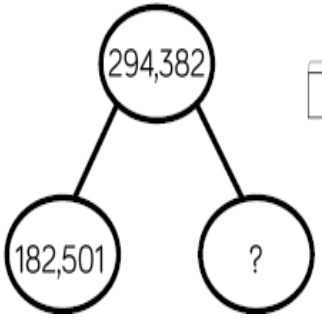
</td>
</tr>
<tr>
<td>Estimate and use inverse to check calculations.</td>
<td colspan="3">76 – 33 = 43. Inverse to check 33 + 43 = 76</td>
</tr>
</table>

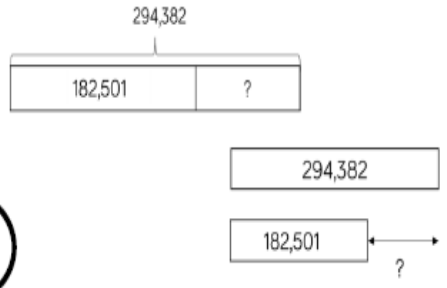
Year 5 and 6 Subtraction.

<table>
<tr><th>Objective & Strategy</th><th>Concrete</th><th>Pictorial</th><th>Abstract</th></tr>
<tr>
<td>Subtracting tens and ones. Subtract numbers with more than four digits using formal methods.

.

Column subtraction with regrouping.</td>
<td>294,382 – 182,501 = 111,881
 

Base 10
 </td>
<td> 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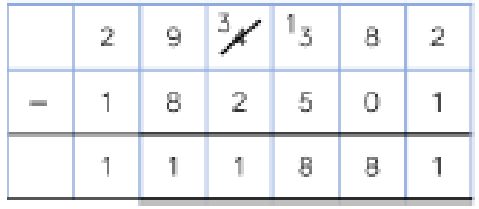
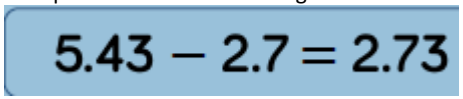
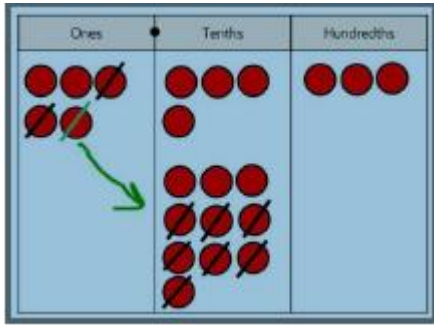
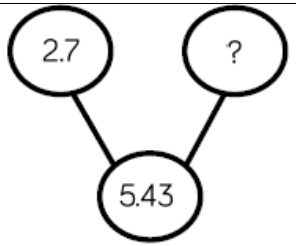
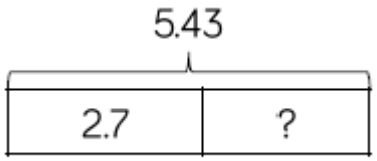
<td> 
</td>
</tr>
<tr>
<td>Subtract with up to 3 decimal places

(Ensure children experience subtracting decimals with a variety of decimal places – including measures)</td>
<td>Place Value counters on a grid are most effective manipulative when subtracting decimals
 

 
</td>
<td> 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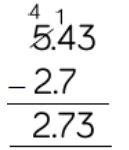
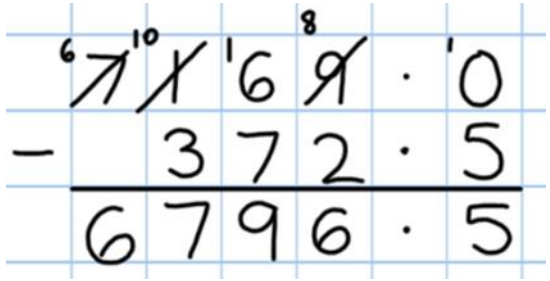
<td> 

Pupil examples:
  </td>
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