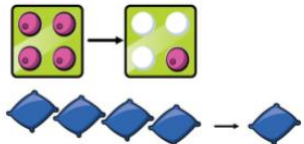
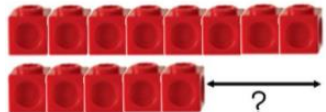
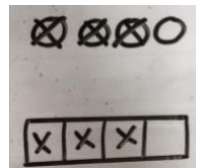
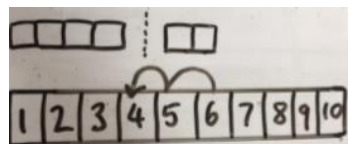
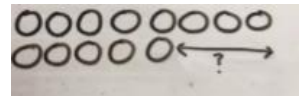
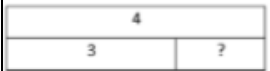
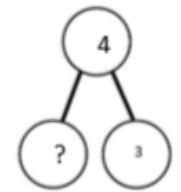
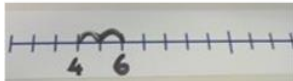
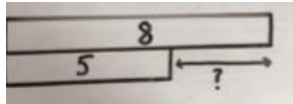


Sledmere and Wetwang Federation Calculation Policy

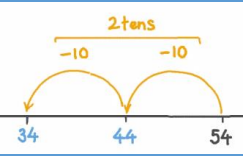
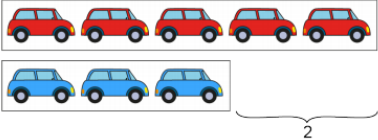
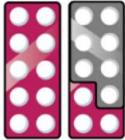
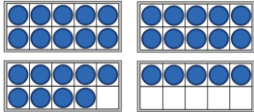
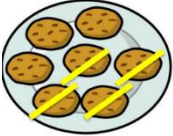
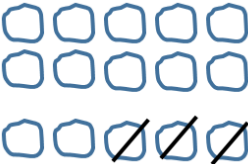
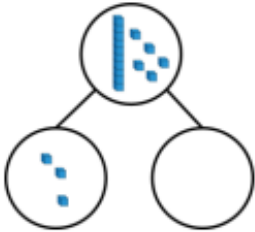
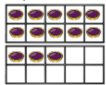
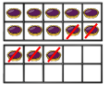
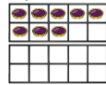
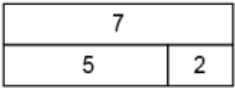
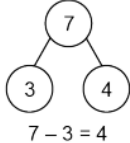
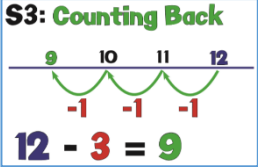
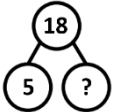
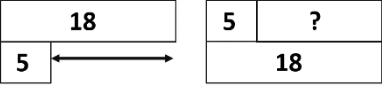
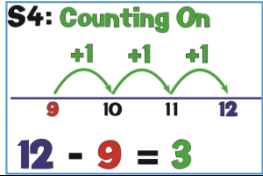
EYFS Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
EYFS	If available, Numicon shapes are introduced straight away and can be used to :  Concrete apparatus is used to relate subtraction to taking away and counting how many objects are left. $5 - 1 = 4$ Concrete apparatus models the subtraction of 2 objects from a set of 5. Construct number sentences verbally or using cards to go with practical activities. Children are encouraged to read number sentences aloud in different ways “five subtract one leaves four” “four is equal to five subtract one” Children make a record in pictures, words or symbols of subtraction activities carried out. Solve simple problems using fingers 	Physically taking away and removing objects from a whole $4 - 3 = 1$  Counting back (using number lines or number tracks) children start with 6 and count back 2. $6 - 2 = 4$  Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used). Calculate the difference between 8 and 5. 	Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.  Children to represent what they see pictorially e.g.  Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate. 	  Children to represent the calculation on a number line or number track and show their jumps. Encourage children to use an empty number line   Can represent difference in a bar model 	Take (away) Leave How many are left/left over? How many have gone? One less, two less ... ten less... How many fewer is ... than Difference between Is the same as	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base tens and ones

	Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html		

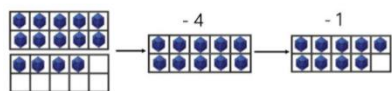
Year One Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
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Year 1	Subtract a pair of one digit numbers e.g. 9 - 5 – see EYFS Subtract a single-digit number from a teens number, including crossing 10, e.g. 15 – 8 – see CPA → Represent and use number bonds to 20 Begin to subtract a multiple of 10 from a two-digit number e.g. 54 – 20 Model on a number line – lots of chanting counting back in tens. 	Subtraction within 10  How many children are in the bumper car now?  Subtracting not crossing ten 20 – 7 using numicon  18 – 5 using counters  15 – 2 using base ten  19 – 4 using tens frame  Subtracting crossing 10	Subtraction within 10 Draw 7 cookies and cross out 4 Draw a first, then, now   Subtracting not crossing 10 15 – 3   Subtracting crossing 10 draw the jam tarts 13 – 5 First there were 13 jam tarts  Then 5 were eaten  Now there are 8 jam tarts. 	Subtraction within 10  7 – 2 = 5  7 – 3 = 4 Subtracting not crossing 10 12-3 number line – count back  S3: Counting Back 12 - 3 = 9 18 -5 use a part whole model  18 – 5 – bar modelling  18 – 5 - number equation 18 – 5 = 13 13 = 18 - 5 Subtracting crossing 10 12- 9 – number line count on  S4: Counting On 12 - 9 = 3	As above Count back Count on Less than Difference Take away Subtract Part – whole First Then Now 100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base tens and ones
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Making 10 using ten frames. $14 - 5$

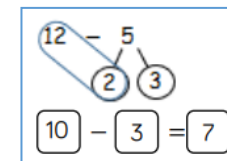
Making 10 using ten frames.
 $14 - 5$



Can also use base ten, counters, numicon – as shown above

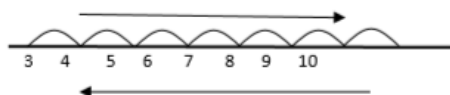
Can also draw the counters and cross out – as above

$12 - 5$
Making 10
by
partitioning
the single
digit



Bar models, number equations and part whole models as shown above.

Count back orally or use a marked or partly marked number line to find the difference by counting on in ones. E.g. $9 - 4 = 5$ (counting back) and when secure $9 - 4 = 5$ (counting on)



Use the three stem sentences - First, then, now.

2 There are 7 cookies on a plate.
6 of the cookies are eaten.
Complete the sentences.

First there were cookies.

Then cookies were eaten.

Now there is cookie.

Solve simple one-step problems and missing number problems subtraction using practical equipment, concrete objects and pictorial representations, Explain methods & reasoning

involving

Useful IWB links for manipulatives

<https://www.coolmath4kids.com/manipulatives/base-ten-blocks>
<https://mathsbot.com/manipulatives/placeValueCounters>
<https://mathsbot.com/manipulatives/bar>
<https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/>
<https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/>
<http://www.ictgames.com/mobilePage/tenFrame/index.html>

Year Two Subtraction

Mental Strategies

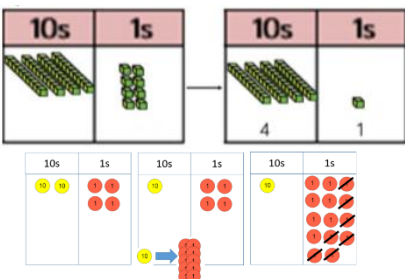
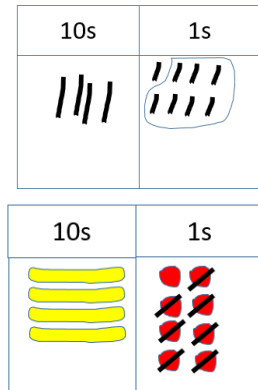
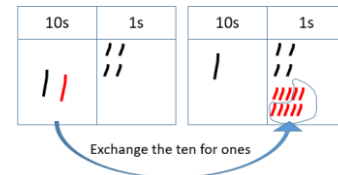
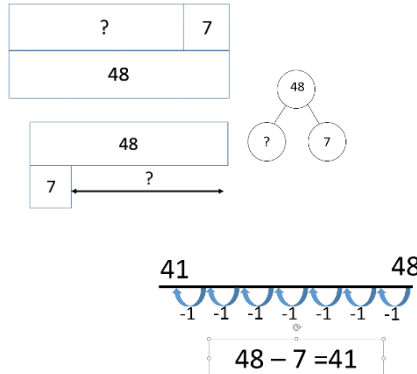
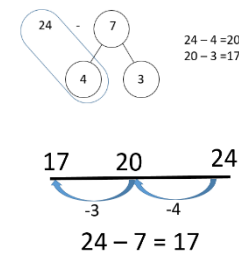
Concrete

Pictorial

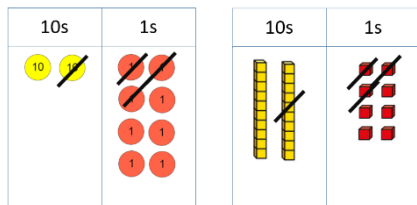
Abstract

Vocabulary

Models,
Images and

Year 2						resources
	Subtract numbers using concrete objects, pictorial representations, and mentally, including: subtract a single-digit number from a two-digit number, including crossing tens boundary, e.g. $26 - 5$, then $22 - 5$ subtract a multiple of 10 from any two-digit number, e.g. $67 - 20$ subtract two two-digit numbers subtract 9, 19, 29, ... or 11, 21, 31... Recall number bonds to 20 fluently and derive and use related facts to 100 (and 11,12,13,14, 15,16,17, 18,19) Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	<u>Subtracting not crossing ten</u> 48 - 7  Tens frames and Numicon can also be used (see Y1 examples)  <u>Subtracting a single digit crossing 10</u> 24 - 7 – using base ten and exchanging a tens rod for ones  Tens frames and Numicon can also be used (see Y1 examples) <u>Subtracting a 2-digit from a 2-digit number not crossing the tens</u>	<u>Subtracting not crossing ten</u> 48 - 7 – children draw them  <u>Subtracting a single digit crossing 10</u> 24 - 7 - children draw them  <u>Subtracting a 2-digit from a 2-digit number not crossing the tens</u> 28 – 13 – can draw in the place value grid	<u>Subtracting not crossing ten</u> 48 - 7 – bar models, part whole models, number lines, number sentence  <u>Subtracting a single digit crossing 10</u> 24 - 7 Can use the bar model, part whole model and number lines as shown above. Also partitioning the subtrahend – see below.  <u>Subtracting a 2-digit from a 2-digit number not crossing the tens</u> 28 – 13 – can draw in the place value grid	Count back Count on Less than Difference Take away subtract Part – whole Minus Decrease	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones Arrow Cards

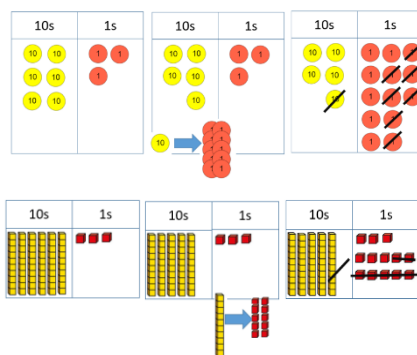
28 – 13 – use counters or base ten



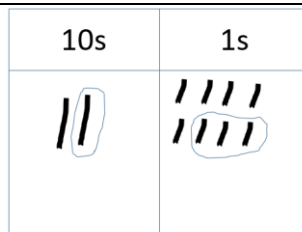
Tens frames and Numicon can also be used (see Y1 examples)

Subtracting a 2-digit from a 2-digit number crossing the tens

63-17

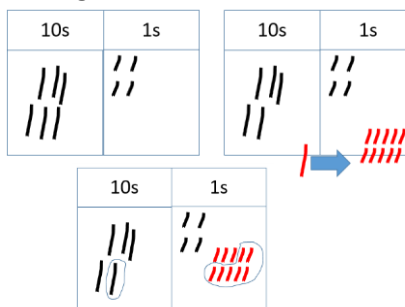


Tens frames and Numicon can also be used (see Y1 examples)

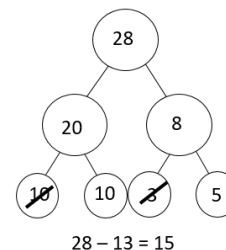


Subtracting a 2-digit from a 2-digit number crossing the tens

63-17 – can be drawn in place value grids

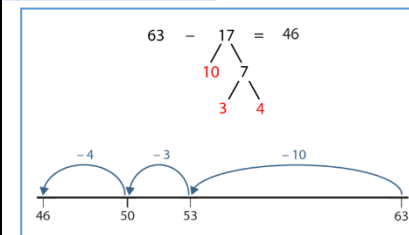
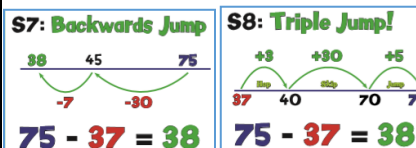
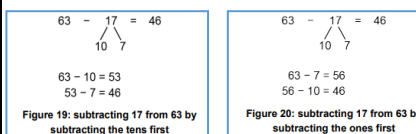


Can use the bar model, part whole model and number lines as shown above. Part whole below.



CURRENT GUIDANCE STATES WE SHOULD NOT USE COLUMN METHOD.

Subtracting a 2-digit from a 2-digit number crossing the ten



Understand when it is sensible to count back (take away) and when to count on (find the difference)
Use empty number lines to bridge through multiple of 10

Subtract by using partitioning of TU - TU

	Solve simple one-step problems involving numbers, quantities and measures using concrete objects and pictorial representations, Recognise and use the inverse relationship between addition and subtraction to check calculations and missing number problems. Begin recording subtraction in columns to support understanding of place value and prepare for efficient written methods		
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html		

Year 3 Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources												
Year 3	Recall number bonds to 20 and links to bonds of multiples of 10 to 100 , complements to 100 e.g. $100 - 55 = 45$ Practise solving varied subtraction questions mentally with two-digit numbers, the answers could exceed 100 Subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds	Subtracting a 2-digit from a 2-digit number not crossing the tens Please see Y2 examples	Subtracting a 2-digit from a 2-digit number not crossing the tens Please see Y2 examples	Subtracting a 2-digit from a 2-digit number not crossing the tens Please see Y2 examples <table><tr><td></td><td>T</td><td>O</td></tr><tr><td></td><td>8</td><td>7</td></tr><tr><td>-</td><td>3</td><td>4</td></tr><tr><td></td><td>5</td><td>3</td></tr></table> Can now move to formal column methods Subtracting a 2-digit from a 2-digit number crossing the tens		T	O		8	7	-	3	4		5	3	Subtraction Partition into hundreds, tens and ones Empty number line Count on Carry back	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value
	T	O																
	8	7																
-	3	4																
	5	3																

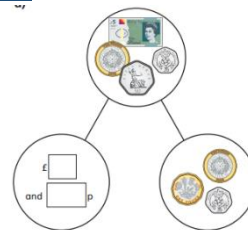
Subtracting money - no decimals

Tommy has £5 and 75p in his pocket.



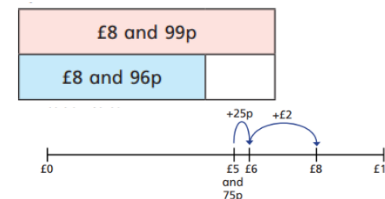
He puts £2 and 50p in his money box.
How much is left in his pocket?

Subtracting money - no decimals



decimals

Formal part whole and counting backwards on a numberline also.



Solve problems, including missing number problems, using number facts, place value, and more complex subtraction

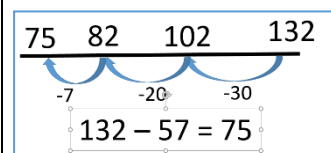
Subtract with up to three digits, using the efficient written methods of columnar subtraction.

Use understanding of place value and partitioning

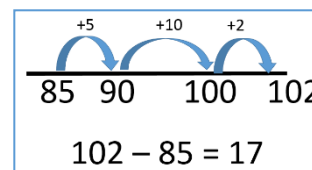
Estimate answers calculations and use inverse operations to check

Children will continue to use empty number lines with increasingly large numbers.

Count back from the largest number
132- 75



Count on or find the difference
102-89



Missing-addend problems

Type of problem: missing part

Rewrite the addition equation as a subtraction equation, for example:

$$329 + \square = 743 \rightarrow 743 - 329 = \square$$

Language focus

"There is a missing part. To find the missing part, we subtract the other part from the whole."

Missing-subtrahend problems

Type of problem: missing part

Rewrite the subtraction equation by swapping the subtrahend and the difference, for example:

$$477 - \square = 285 \rightarrow 477 - 285 = \square$$

Language focus

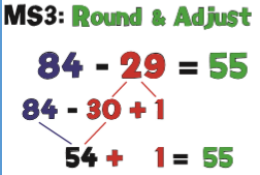
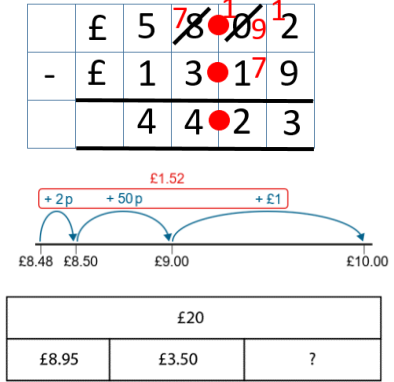
"There is a missing part. To find the missing part, we subtract the other part from the whole."

Useful IWB links for manipulatives

<https://www.coolmath4kids.com/manipulatives/base-ten-blocks>
<https://mathsbot.com/manipulatives/placeValueCounters>

<https://mathsbot.com/manipulatives/bar>
<https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/>
<https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/>
<http://www.ictgames.com/mobilePage/tenFrame/index.html>

Year 4 Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 4	Practise mental methods with increasingly large numbers to aid fluency Subtract any pair of two-digit and three-digit numbers, including crossing the 10 and 100 boundary, e.g. 58 - 23 Count on and back in 10s from any number Subtract a near multiple of 10, e.g. 84 - 29 MS3: Round & Adjust  Understand subtraction as inverse of addition Children know the vocabulary below Minuend minus subtrahend equals the difference	Subtracting 4 digit numbers crossing tens and hundreds See Y3 guidance for 3 digit numbers – it is the same principle. Subtracting with money up to 4 digits using decimals Use with real money to show how to find differences	Subtracting 4 digit numbers crossing tens and hundreds See Y3 guidance for 3 digit numbers – it is the same principle. Subtracting with money up to 4 digits using decimals Children can draw the coins and notes and show the exchange.	Subtracting 4 digit numbers crossing tens and hundreds See Y3 guidance for 3 digit numbers – it is the same principle. Subtracting with money up to 4 digits using decimals 	Subtraction Partition into hundreds, tens and ones Empty number line Count on Carry back First Then Now Subtrahend Minuend	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones
		Subtract numbers with up to 4 digits using efficient written column method with increasingly large numbers to aid fluency.				

	<table border="1"> <tr> <td></td><td>£</td><td>5</td><td>8</td><td>← minuend</td></tr> <tr> <td>-</td><td>£</td><td>1</td><td>3</td><td>← subtrahend</td></tr> <tr> <td></td><td></td><td>4</td><td>5</td><td>← difference</td></tr> </table>		£	5	8	← minuend	-	£	1	3	← subtrahend			4	5	← difference	Estimate and use inverse operations to check answers Solve subtraction of two-step problems in contexts, deciding which operations and methods to use and why. See Y3 missing subtrahend and addend problems.	Difference Find the difference Decrease / reduced by	Arrow Cards
	£	5	8	← minuend															
-	£	1	3	← subtrahend															
		4	5	← difference															
	Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html																	

Year 5 and Year 6 Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
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Year 5 And Year 6	Subtract numbers with increasingly large numbers to aid fluency e.g. $12\ 462 - 2\ 300 = 10\ 162$ Use rounding to check answers and determine, levels of accuracy Subtract a pair of two or three-digit multiples of 10, e.g. $80 - 30$, $45 - 36$ and $450 - 360$ Subtract a near multiple of 10 or 100 from any two-digit or three-digit number, e.g. $235 - 199$ Subtract pairs of decimal fractions each with ones and tenths, e.g. $5.7 - 2.5$, $6.3 - 4.8$ See Y3 missing subtrahend and addend problems.	Subtract whole numbers with more than 4 digits and increasingly large numbers using efficient column written methods with decomposition to aid fluency Please see the Year 3 and Year 4 examples as they have the same principles <u>Negative numbers</u> First it was seven Then 9 was cut off Now there 2cm less than the start Use practical apparatus to show change First it was 9 degrees Now it is -3 degrees What was the change?	Subtract whole numbers with more than 4 digits and increasingly large numbers using efficient column written methods with decomposition to aid fluency Please see the Year 3 and Year 4 examples as they have the same principles <u>Negative numbers</u> Negative numbers represent change The temperature was 9 °C in the day, then it dropped to -3 °C at night. What was the change in temperature?	Subtract whole numbers with more than 4 digits and increasingly large numbers using efficient column written methods with decomposition to aid fluency Please see the Year 3 and Year 4 examples as they have the same principles <u>Negative numbers</u> $7 - 9 = -2$ There is a negative difference of 2 The difference between 9 and -3.	Subtraction Partition into hundreds, tens and ones Empty number line Count on Carry back First Then Now Subtrahend Minuend Difference Find the difference Decrease / reduced by Negative change 100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones Arrow Cards
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar				

	https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html
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