

Year R

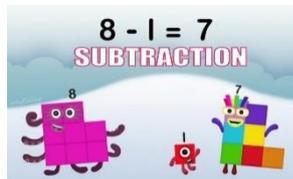
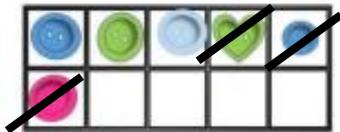
Stage 1 - Subtracting by taking away objects – how many are left?

Children use objects to physically take objects away to reinforce the vocabulary and understanding of the concept of subtraction. Children use a range of objects, items and mathematical equipment.



Stage 2 - Subtraction using tens frames

Children begin to explore key subtraction facts working firstly with numbers to 5 and then 10. 'Numberblocks' units taught alongside to enhance children's **conceptual understanding**.



First there were 5 people on the bus.
Then 2 people got off the bus.
Now there are 3 people on the bus.

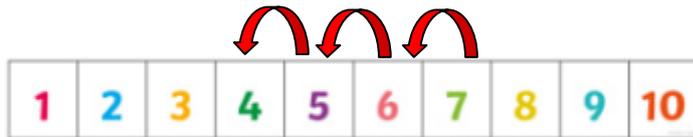
Stage 3 - Subtraction by counting back

Children learn to subtract a small group of objects (a part) away from a larger group of objects (a whole). Children count backwards aloud and move the objects away from the group as they are counted.



Stage 4 - Subtraction using structured number tracks

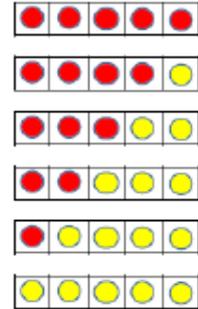
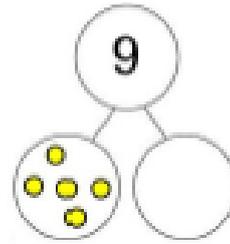
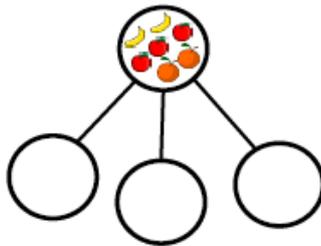
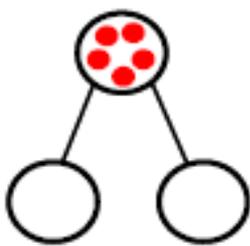
Children continue to explore subtraction by 'counting back in ones' along a number track.



Year 1

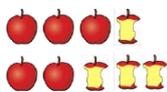
Stage 1 - Subtraction using part part wholes and tens frames

Children develop their knowledge of **part-part-wholes** to explore **partitioning** numbers into numerous parts. Emphasis is placed on using **concrete resources**. Learning then progresses onto exploring **fact families**, **number bonds** and finding a part.



Stage 2 - Subtraction by using subtraction stories to visualise taking away

Within this stage, subtraction is taught through maths stories using visual pictures. Children use their understanding of 'parts' and 'wholes' to write subtraction calculations.

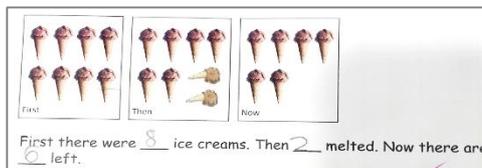
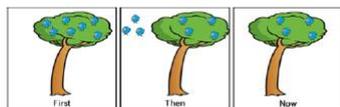


At first there were _____.

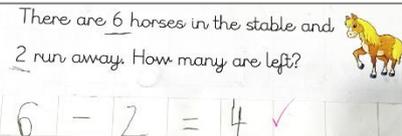
Then _____ were eaten.

Now there are _____.

There were 7 birds in a tree and 3 fly away.



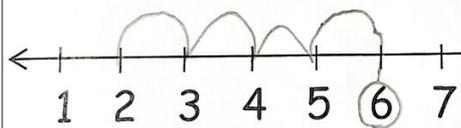
First there were 8 ice creams. Then 2 melted. Now there are 6 left.



Stage 3 - Subtraction using structured number lines

Children continue to explore subtraction by 'counting back in ones' along a number line.

$$6 - 4 = \underline{2} \quad \checkmark$$

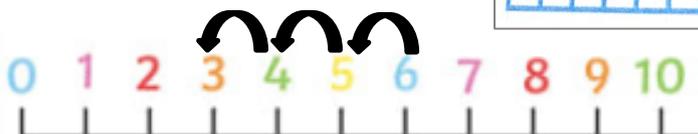


Lucas has 19 footballs.

He kicks 9 of them over the fence.

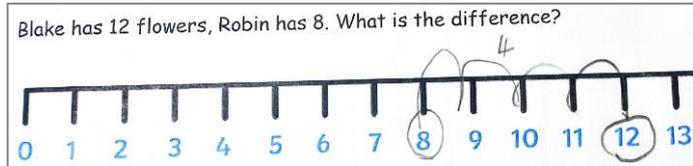
How many footballs does he have now?

10 ✓



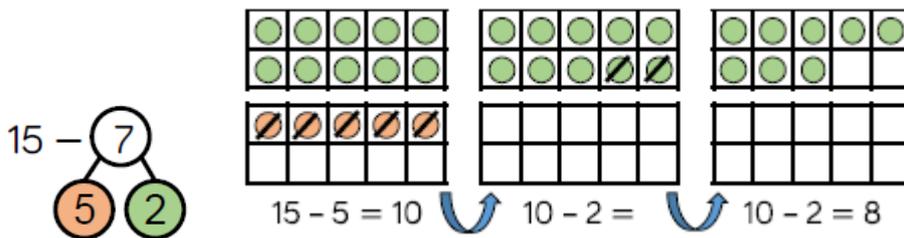
Stage 4 – Subtracting by finding the difference

Children use physical objects and equipment then visual pictures to represent finding the difference problems. Children can choose to count back or on to find the difference between the whole and a part.



Stage 5 - Subtraction using tens frames to make 10

Children will subtract numbers within 20 by crossing 10. Children will use their knowledge of **partitioning** numbers in different ways to subtract using their number facts.



Year 2

Stage 1 - Subtraction using part part wholes

Children develop their knowledge of **part-part-wholes** to explore **number bonds**, related facts and **fact families**. The placement of the equals symbol is explored at length during **fluency** lessons.

Complete this fact family

Stage 2 - Subtraction using tens and ones jottings

Children apply their place value knowledge to represent numbers and numerals as pictorial tens and ones jottings. The jottings mimic the concrete dienes resources which are explored before this stage is introduced.

Regrouping jottings are taught when subtraction crosses a tens boundary.

$99 - 48 = 51$

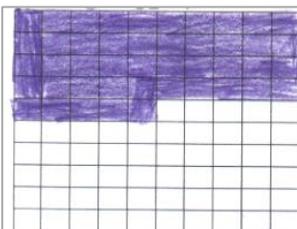
$23 - 17 = 6$

Stage 3 - Subtraction using hundred squares and bar models

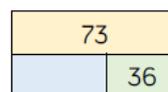
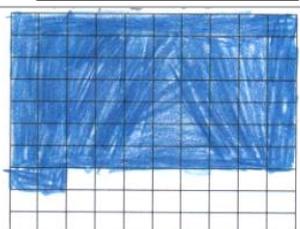
To begin with, **hundred squares** are used to solve missing number problems. Children are taught to use their **number bonds** to 10 to support them.

Bar models are formally introduced to support problem solving and missing number problems. Children apply their understanding of **part-part-wholes** and the associated **stem sentences** to generate **inverse calculations**.

$100 - 45 = 55$



$100 - 72 = 28$



$43 + 57 = 100$

$100 - 57 = 43$

Stage 4 - Subtraction using partitioning

Children use their understanding of **partitioning** and **related facts** to subtract two 2-digit numbers. This stage is firstly taught as a written method and then developed as a mental strategy for subtraction.

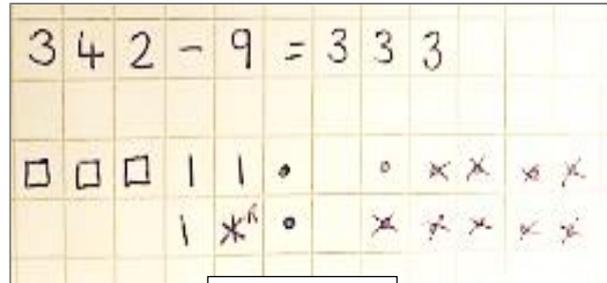
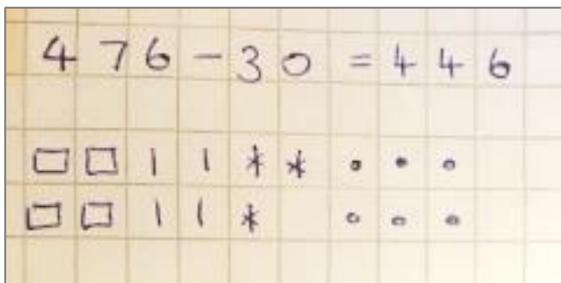
$$\begin{array}{r} 78 - 25 = 53 \\ \hline \boxed{20} \quad \boxed{5} \\ \hline 78 - 5 = 73 \\ \hline 73 - 20 = 53 \end{array}$$

Year 3

Stage 1 - Subtraction using hundreds, tens and ones jottings

Children apply their place value knowledge of 3-digit numbers and represent numbers as pictorial hundreds, tens and ones jottings before subtracting.

Concrete resources are used extensively to model **regrouping**.



Regrouping

Stage 2 - Subtraction using expanded column subtraction

Throughout this stage, children need to use their knowledge of place value and the **partitioning** method alongside **concrete resources**. Subtraction is organised more formally to begin to prepare children for more formalised column subtraction.

$594 - 52 = 542$			
Hundreds	Tens	Ones	
500	90	4	
- 0	50	2	
500	40	2	= 542

Regrouping

$274 - 58 = 216$			
Hundreds	Tens	Ones	
200	70 ⁶⁰	4 ¹⁴	
- 0	50	8	
200	10	6	= 216

Stage 3 - Subtraction using column subtraction

Children begin by subtracting the ones, tens and then the hundreds. **Fluency** lessons explore crossing ten and hundred boundaries where **regrouping** is necessary. **Concrete resources** are used extensively to model.

	H	T	O
	4	7	8
-	2	1	5
	2	6	3

Regrouping

	H	T	O
	2	7 ⁶	8 ⁴
-	1	2	8
	1	2	6

Year 4

Stage 1 - Subtraction using column subtraction (up to 4-digit numbers) with no regrouping

Children continue to use the formal method of column subtraction, but with two 4-digit numbers. To begin with they work with calculations that do not require any **regrouping**. **Place value grids** should be used to support understanding alongside column addition.

	Thousands	Hundreds	Tens	Ones
	7	6	4	6
-	4	3	3	5

TH	H	T	O
6	5	8	2
-	5	7	1
<hr/>			
6	0	1	1

They should also complete calculations which include numbers with different amounts of digits.

TH	H	T	O
3	4	5	4
-	2	3	2
<hr/>			
1	1	2	2

Stage 2 - Subtraction using column subtraction (up to 4-digit numbers) with regrouping

Building on from what they learnt in the previous stage, children should subtract together two 4-digit numbers where they have to complete **regrouping**. First, they explore calculations where there is one opportunity to **regroup**, but in different places in the calculation. Then, they move onto calculations where there are multiple regroupings.

TH	H	T	O
3 4	5	7	8
-	3	6	4
<hr/>			
0	9	3	5

TH	H	T	O
6	5	7 8	18
-	4	5	9
<hr/>			
6	1	1	9

TH	H	T	O
5	5 3	4 13	13
-	4	3	4
<hr/>			
1	2	9	8

Year 5

Stage 1 - Subtraction using column subtraction (more than 4-digits)

Children use column subtraction to complete calculations with numbers with more than 4-digits. This includes calculations with no **regrouping** and multiple regroupings. It also includes the subtraction of numbers that have a different amount of **digits** and more than two numbers.

TH	TH	H	T	O	
8	4	6	4	8	
-	7	2	3	4	7
<hr/>					
1	2	3	0	1	

no regrouping

TH	TH	H	T	O	
3 4	5	3	6		
-	8	4	2	6	
<hr/>					
3	7	1	1	0	

one regrouping

TH	TH	H	T	O	
3	6 7	4 5	2 3	6	
-	2	2	8	1	9
<hr/>					
1	4	6	8	7	

They should also experience '0' as a place holder.

Stage 2 - Subtraction of decimals using column subtraction (same amount of decimal places)

As part of their learning on **decimals**, children subtract decimals greater than one with the same amount of decimal places, using column subtraction.

Place value grids and counters are extremely helpful in ensuring children are understanding the value of each **digit** and understanding when to **regroup**.

Ones	Tenths	Hundredths

0	.	t	h	
4	.	3 4	3	
-	2	.	1	4
<hr/>				
2	.	1	9	

no regrouping

0	.	t	
5 4	.	1	4
-	3	.	8
<hr/>			
2	.	6	

one regrouping

0	.	t	h	
4 5	.	2 3	4	
-	2	.	1	5
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2	.	8	9	

multiple regrouping

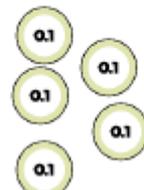
Stage 3 - Subtraction of decimals using column subtraction (different amount of decimal places)

Children now move into subtracting decimals greater than one with different amounts of decimal places, using column subtraction.

They focus on the following:

- Lining-up columns correctly
- putting in 0 to hold the place (these have been written in pencil in the examples) and using them where appropriate
- checking that their answers are sensible

Place value grids and counters continue to be used.

Ones	Tenths	Hundredths
		

no regrouping

0	.	t	h
4	.	5	4
-	1	.	4 0
3	.	1	4

one regrouping

0	.	t	h
5	.	10	6
-	3	.	7 0
2	.	3	6

multiple regrouping

0	.	t	h	th
3	.	16	7	8 10
-	3	.	8	2 5
0	.	8	7	5

Year 6

Children in Year 6 continue to master the method of column subtraction with a variety of numbers, including decimals.