

SUBTRACTION

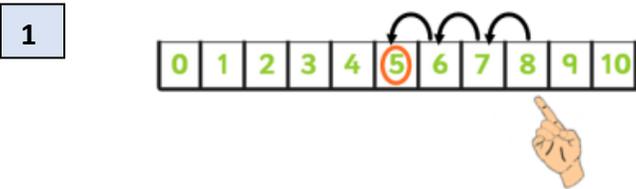
Key Objective

To subtract one-digit and two-digit numbers to 20.

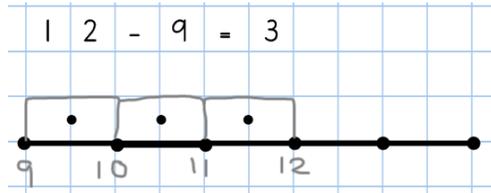
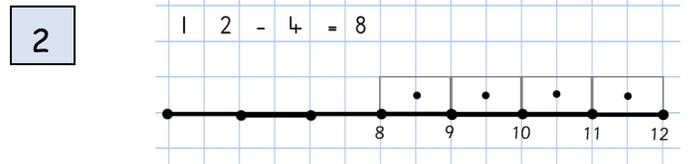
Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_

8 - 5 = 3 Use a number track to count back



12 - 4 = 8 Use a guided number line



If numbers are close together, use counting on method to subtract e.g. begin on number 9 and then count on to 12. Begin using number track then move on to guided number line.

4 Mental strategies - Recall subtraction facts within and up to 10 and 20.

Key skills for subtraction at Y1:

- Given a number, say one more or one less.
- Count to and over 100, forward and back, from any number.
- Represent and use subtraction facts to 20 and within 20.
- Subtract with one-digit and two-digit numbers to 20, including zero.
- Solve one-step problems that involve addition and subtraction, using concrete objects (i.e. bead string, objects, cubes) and pictures, and missing number problems.
- Read and write numbers from 0 to 20 in numerals and words.

Year 1

SUBTRACTION

Key Objective

Subtract numbers using concrete objects, pictorial representations, and mentally, including:
a 2-digit number and ones and two 2-digit numbers

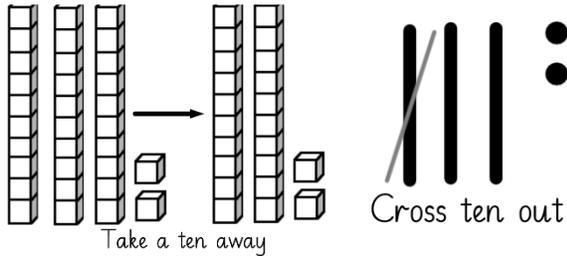
Key Vocabulary

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how many more, how many fewer, less than, most, least, count back, how many left,

$32 - 10 = 22$ (use cubes to represent tens and ones. Move on

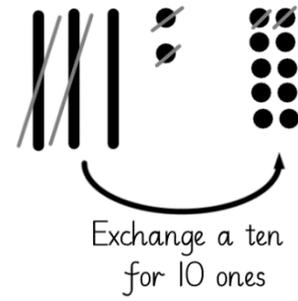
to drawing and crossing out tens and ones)

1



Crossing the tens boundary

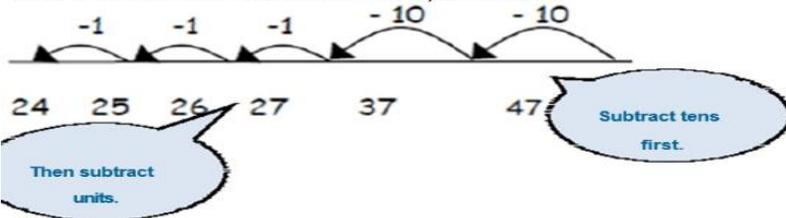
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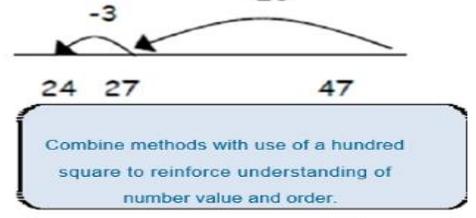
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Using empty number lines to partition, subtract tens and then

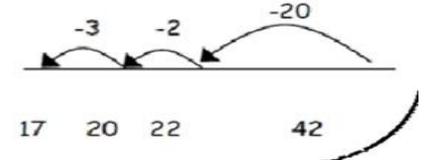
$47 - 23 = 24$ Partition the second number and subtract it in tens and units, as below:



Move towards more efficient jumps back, as below:

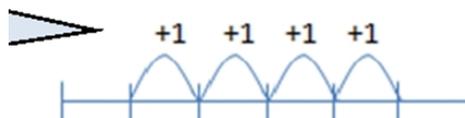


Teaching children to **bridge through ten** can help them to become more efficient, for example $42 - 25$:



4

$42 - 38 = 4$



Many mental strategies are taught. Children are taught to recognise that when numbers are close together, it is more efficient to **count on** the difference. They need to be clear about the relationship between addition and subtraction.

Year 2



SUBTRACTION

Key skills for subtraction at Y2:

- Recognise the place value of each digit in a two-digit number.
- Recall and use subtraction facts to 20 fluently and derive and use related facts up to 100.
- Subtract using concrete objects, pictorial representations, 100 squares and mentally, including: a two- digit number and ones, a two-digit number and tens, and two two-digit numbers.
- Show that subtraction of one number from another cannot be done in any order
- Recognise and use inverse relationship between addition and subtraction, using this to check calculations and missing number problems.
- Solve simple addition and subtraction problems including measures, using concrete objects, pictorial representation, and also applying their increasing knowledge of mental and written methods.
- Read and write numbers to at least 100 in numerals and in words.

SUBTRACTION

Key Objective

Subtract numbers with up to three digits, using the formal written method of columnar subtraction.

Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer / less than, most, least, count back, how many left, how much less is_? difference, count on, strategy, partition, tens, units **exchange, decrease, hundreds, value, digit**

1 Expanded column - no exchange

3	0	+	4		
-	2	0	+	3	
<hr/>					
1	0	+	1		

34-23=11

2 Expanded column - exchange

STEP 2: Introduce 'exchanging' through practical subtraction. Make the larger number with Base 10, then subtract 47 from it.

72 - 47



~~70~~ + 2 ✓
- 40 + 7

20 + 5 = 25

Before subtracting '7' from the 72 blocks, they will need to exchange a row of 10 for ten units. Then subtract 7, and subtract 4 tens.

3

5	0				
6	0	+	15		
-	3	0	+	7	
<hr/>					
2	0	+	8		

4

2	0	0	+	1	5	0			
3	0	0	+	6	0	+	15		
-	1	0	0	+	8	0	+	7	
<hr/>									
1	0	0	+	7	0	+	8		

Once pupils are secure with the understanding of 'exchanging', they can use the partitioned column method to subtract any 2 and 3-digit numbers.

2	3	8	-	1	4	6	=	9	2
2	0	0	+	3	0	+	8		
-	1	0	0	+	4	0	+	6	
<hr/>									
	0	+	9	0	+	2			

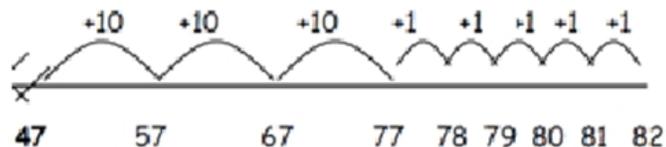
5

3	6	5	
-	1	2	3
<hr/>			
2	4	2	

6

3	5	15	
-	2	4	7
<hr/>			
1	1	5	

7 Start at the smaller number and count on **in tens first**, then count on in units to find the rest of the difference:



Year 3

SUBTRACTION

Key skills for subtraction at Y3:

- Estimate answers and use inverse operations to check Solve problems, including missing number problems.
- Find 10 or 100 more or less than a given number Calculate,
- Practise mental subtraction strategies, such as subtracting near multiples of 10 and adjusting (e.g. subtracting 19 or and select most appropriate methods to subtract, explaining why.
- Read and write numbers up to 1000 in numerals and words.
- Recognise the place value of each digit in a 3-digit number -
Counting up differences as a mental strategy when numbers are close together or near multiples of 10 (see examples above)
- Subtract mentally a: **3-digit number and ones, 3-digit number and tens, 3-digit number and hundreds .**

SUBTRACTION

Key skills for subtraction at Y4:

- Subtract by counting on where numbers are close together or they are near to multiples of 10, 100 etc.
- Children select the most appropriate and efficient methods for given subtraction calculations.
- Estimate and use inverse operations to check answers.
- Solve addition and subtraction 2-step problems, choosing which operations and methods to use and why.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Find 1000 more or less than a given number.
- Count backwards through zero, including negative numbers.
- Recognise place value of each digit in a 4-digit number Round any number to the nearest 10, 100 or 1000
- Solve number and practical problems that involve the above, with increasingly large positive numbers

SUBTRACTION

Key Objective

Subtract whole numbers with more than 4 digits, including using the formal written method of columnar subtraction.

Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer, less than, most, least, count back, how many left, how much less is...? Count on, strategy, partition, tens, ones, exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths,

Compact column

1

		4		3				
	5		2	4		5	6	
-	2		7	2		8	4	
	2		5	1		7	2	

Children who are still not secure with number facts and place value will need to remain on the partitioned column method until ready for the compact method.

Subtracting with larger integers.

2

Add place holder

		4		3				
	5		2	4		5	6	
-	0		7	2		8	4	
	4		5	1		7	2	

3

		4					
	8	5		4		8	
-	3	2	.	7		5	
	5	2	.	7		3	

5

	6	7	9	6	.	0	
-	3	7	2	.	5		
	6	7	9	6	.	5	

Create lots of opportunities for subtracting and finding differences with money and measures.

Year 5

SUBTRACTION

Key skills for subtraction at Y5:

- Subtract numbers mentally with increasingly large numbers.
- Use rounding and estimation to check answers to calculations and determine, in a range of contexts, levels of accuracy .
- Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.
- Read, write, order and compare numbers to at least 1 million and determine the value of each digit.
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 million.
- Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.
- Round any number up to 1 million to the nearest 10, 100, 1000, 10 000 and 100 000.

SUBTRACTION

Key Objectives

Subtract whole numbers with more than 4 digits, including using the formal written method of columnar subtraction.

Key Vocabulary

equal to, take, take away, less, minus, subtract, leaves, distance between how many more, how many fewer, less than, most, least, count back, how many left, how much less is...? Count on, strategy, partition, tens, ones, exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths,

1

$$\begin{array}{r}
 \cancel{9} \cancel{5} \cancel{0}, 699 \\
 - \quad 89,949 \\
 \hline
 60,750
 \end{array}$$

Using the compact column method to subtract more complex integers

2

$$\begin{array}{r}
 \cancel{7} \cancel{2} 5.4 \overset{7}{\cancel{8}} \overset{0}{\circ} \\
 - \quad 72.357 \\
 \hline
 53.123
 \end{array}$$

Add place holder

Empty decimal places can be filled with **zero** to show the place value in each column.

Using the compact column method to subtract money and measures, including decimals with different numbers and decimal places.

Year 6

SUBTRACTION

Key skills for subtraction at Y6:

- Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.
- Read, write, order and compare numbers up to 10 million and determine the value of each digit
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero.
- Children need to utilise and consider a range of mental subtraction strategies, jottings and written methods before choosing how to calculate.