## EYFS

## Number ELG

- Have a deep understanding of numbers to 10 , including the composition of each number.
- Recall fluently number bonds up to 5 and some number bonds to 10.

EYFS Early Learning Goals

- Recognise quantities without counting up to 5 .


## Numerical Patterns ELG

Children at the expected level of development will:

- Count reliably beyond 20 , recognising the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Explore patterns within numbers to 10 , including doubling, halving and sharing

Year 1
Basic mathematical vocabulary
Take away, distance between, difference between, less than, subtract, minus, leave, one less, two less, ten less, halve, half. How many more? How much greater? How many fewer? How much more is...? How many are left? How many have gone? How many fewer
is...than...? How much less is...?

## Instructional vocabulary

Start from, start with, start at, look at point, show me

## National curriculum link

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.

## Objectives:

Represent and use number bonds and related subtraction facts within 20.
Subtract one-digit and two-digit numbers to 20, including zero.
Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as $7=$ $\qquad$

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## Ten frames/ numicon

## 

Physical objects


Counters, cubes, beadstrings

Use counters and move them away from the group as you take them away counting backwards as you go.

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subtract, subtraction, take (away), minus leave, how many are left/left over? one less, two less... ten less... one hundred less how many fewer is... than...? how much less is...? difference between half, halve = equals, sign, is the same as, tens boundary difference, partition, rearrange, inverse, place value

## Instructional vocabulary

tell me, describe, name, pick out, discuss, talk about, explain, explain your method, explain how you got your answer, give an example of... show how you...
National curriculum link:
To solve subtraction problems using their knowledge of mental and written methods.

## Objectives:

- Solve subtraction problems using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
- Recall and use subtraction facts to 20 fluently.
- Subtract numbers, including: a two-digit number and ones, a two-digit number and tens and two two-digit numbers.
- Show that subtraction is not commutative.
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

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subtract, subtraction, take (away), minus, leave, how many are left/left over? one less, two less... ten less... one hundred less how many fewer is... than...? how much less is...? difference between half, halve = equals, sign, is the same as, tens boundary, hundreds boundary,
exchange, carried digits
Instructional vocabulary
explain your method, explain how you got your answer, give an example of... show how you... show your working

## National curriculum link:

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

## Objectives:

- Estimate the answer to a calculation and use inverse operations to check answers.
- Subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds.
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.


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| (0) | (1) | - |  |
| :---: | :---: | :---: | :---: |
| (0) (0) | (1) (1) | 100 | 234 |

Now look at the tens, can I take away 8 tens easily? I need to exchange one hundred for ten tens.


Now I can take away eight tens and complete my subtraction.


Show children how the concrete method links to method alongside your working. Cross out the numbers when exchanging and show where we write our new amounts.


Bar modelling

| 368 |  |
| :---: | :---: |
| 124 | $?$ |

## Number line



Children can subtract on a number line using efficient jumps.

| 754 | 700 | 50 | 4 |
| :---: | :---: | :---: | :---: |
| -86 |  | 80 | 6 |
| - |  |  |  |
| 754 | 600 | 140 | 14 |
| - 86 |  | 80 | 6 |
| 668 | 600 | 60 | 8 |


"It's tricky to take 6 from 4 and 80 from 50. I need to rearrange the number. I will exchange one ten from 50 which leaves 40 and makes 14 in the ones. 40 to subtract 80 is tricky. I will exchange one hundred from 700 and make 140 . 14 subtract 6 equals 8.140 subtract 80 equals 60 and 600 subtract 0 equals 600 ."
An example of the children's written method

| $238-146=92$ |
| :---: |
| $1000+30+8$ |
| $200+40+6$ |
| $100+40+2$ |
| $0+90+2$ |

## Columnar subtraction

$$
\begin{array}{r}
6141 \\
784 \\
-\quad 286 \\
\hline
\end{array}
$$

Emphasis on language of place value, i.e. 14 ones subtract 6 ones, 14 tens subtract 8 tens, and 6 hundreds subtract 2 hundreds.


## National curriculum link:

Add and subtract numbers with up to 4 digitd using the formal written methods of columnar addition and subtraction.

## Objectives:

- Estimate and use inverse operations to check answers to a calculation.
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

| Concrete | Pictorial | Abstract |
| :---: | :---: | :---: |
| Use cards to understand the decimal system. <br> 4-digit numbers with zero as placeholders Decimals with 2 decimal places <br> Use place counters for those who have not yet understand the exchange concept. | Bar modelling $3682-1245=$ $2456-734=1822$ <br> Subtract mentally pairs of multiples of 1000 using known facts $\begin{aligned} & 6000-2000=4000 \text { because } \\ & 6-2=4 \end{aligned}$ <br> Remodelling strategy (keeping the difference the same) $3548-1998$ $3550-2000=1550$ <br> Adding 2 to each side of the equation <br> Find the difference strategy <br> $13 \cdot 6-2 \cdot 8=$ | Column partioning: $\begin{aligned} & 2754-1562=1192 \\ & 2000+700+50+4 \\ & 1000+500+60+2 \end{aligned}$ <br> Columnar subtraction 2344-187 $\begin{array}{r} 2^{1} 31 \\ 2344 \\ 6467-2684 \\ \frac{-187}{2157} \\ 5131 \\ 8467 \\ -\quad 2684 \\ \hline \end{array}$ |

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## Year 5

## Basic mathematical vocabulary

subtract, subtraction, take (away), minus, leave, how many are left/left over? ten less... one hundred less how many fewer is... than...? how much less is...? difference between half, halve = equals, sign, is the same as tens boundary, hundreds boundary, inverse, units boundary, tenths boundary, exchange, carried digits.

## Instructional vocabulary

put, place, arrange, rearrange change, change over, adjusting, adjust, split, separate

## National curriculum link:

Add and subtract whole numbers with more than digits, including using formal written methods (columnar addition and subtraction)

Objectives:

- Subtract whole numbers with more than 4 digits.
- Subtract numbers mentally with increasingly large numbers.
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- Solve multi-step subtraction problems in contexts, deciding which operations and methods to use.

Columnar subtraction

$$
\begin{array}{r}
2^{1} 31 \\
52 Z A 4 \\
-\quad 1187 \\
\hline 51157
\end{array}
$$

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Include calculations with 'empty columns'.
32490
32490
-725 324.9-7.25
-725 324.9-7.25
31765
31765


## Representing problems

Kangchenjunga is the third highest mountain in the world at 28,169 feet above sea level. Lhotse is the fourth highest at 27,960 feet above sea level. Find the difference in heights mentally.

Keeping the difference the same to make the numbers easier to calculate with. 122, 456 - 11,999
122, 457 - 12,000

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## Year 6

## Basic mathematical vocabulary

subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between half, halve how many more/fewer is... than...? how much more/less is...? equals, sign, is the same as tens boundary, hundreds boundary, units boundary, tenths boundary, inverse

## Instructional vocabulary

put, place arrange, rearrange change, change over adjusting, adjust split, separate, carry on, continue, repeat, what comes next? Predict, describe the pattern, describe the rule, find, find all, find different, investigate

## National curriculum link

Solve a range of problems involving subtraction.

## Objectives:

- Perform mental calculations, including mixed operations and large numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve multi-step subtraction problems in contexts.


## Columnar subtraction

Include calculations with up to 3 'empty columns'.

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