

Maths Calculation Policy

For EYFS
September 2014

Introduction

The Calculations Policy

This calculations policy has been written to provide an understanding of when and how the four operations –addition, subtraction, multiplication and division, are taught.

It is designed to ensure consistency throughout the school and to make teachers aware of the continuity and progression in skill development across the year groups. It aims to enable staff, and parents, to see how the concepts, facts and calculation strategies and methods used in any particular year are taught, and how these build on previous learning and contribute to future learning.

Structure of the document

For each year in Early Year, this policy begins with an outline of the key knowledge and understanding of number and the number system, including place value; that pupils are taught in order to calculate successfully.

NUMBER AND PLACE VALUE

To add, subtract, multiply and divide successfully, pupils need to:

- count, read and write numbers from 1 to 10 in numerals and words
- count, read and write numbers to 50 in numerals

(Taken from Reception)

Then, for each year group, a detailed summary is provided of how each of the four operations: addition, subtraction, multiplication and division – is taught. This summary includes information on the following:

Conceptual understanding and procedural fluency

The key concepts pupils need to know and understand in order to calculate successfully.
The number facts that pupils need to recall with fluency.

Conceptual understanding and procedural fluency

To add successfully, pupils need to:

- understand addition as combining two or more groups of objects
- represent and use number bonds within 10
- add one-digit and two-digit numbers to 10, including zero

(Taken from Reception)

Reason mathematically and solve problems

The problem solving and reasoning skills pupils need to develop in order to use and apply their conceptual understanding and procedural fluency.

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, addition to:

- solve one-step problems that involve addition in familiar contexts, e.g. money

(Taken from Reception)

Nursery

NUMBER AND PLACE VALUE

To add, subtract, multiply and divide successfully, pupils need to:

- count, read and write numbers from 1 to 10 in numerals.
- count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number.
- given a number, identify one more and one less to 10.

ADDITION

Conceptual understanding and procedural fluency

To add successfully, pupils need to:

- understand addition as combining two or more groups of objects, to 10.
- add one-digit numbers to 5, including zero.

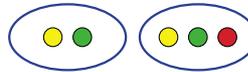
Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, addition to:

- solve one-step problems that involve addition, using concrete objects and pictorial representations.

Mental strategies

- Use of models and images:
 - concrete objects/pictorial representations



SUBTRACTION

Conceptual understanding and procedural fluency

To subtract successfully, pupils need to:

- understand subtraction as 'taking away'.

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, subtraction to:

- solve one-step problems that involve subtraction, using concrete objects and pictorial representations.

Mental strategies

- Use of models and images:
 - concrete objects/pictorial representations



Nursery

DIVISION

Conceptual understanding and procedural fluency

To divide successfully, pupils need to:

- understand division through sharing small quantities between 2.

Reception

NUMBER AND PLACE VALUE

To add, subtract, multiply and divide successfully, pupils need to:

- count, read and write numbers from 1 to 10 in numerals and words
- count, read and write numbers to 50 in numerals
- count to and across 50, forwards and backwards, beginning with 0 or 1, or from any given number
- count in multiples of twos, fives and tens
- given a number, identify one more and one less to 20
- compare and order numbers to at least 20 (from different starting points)

ADDITION

Conceptual understanding and procedural fluency

To add successfully, pupils need to:

- understand addition as combining two or more groups of objects
- understand addition as counting on
- represent and use number bonds within 10
- add one-digit and two-digit numbers to 10, including zero
- recall doubles of all numbers to 6
- read, write and interpret mathematical statements involving addition (+) and equals (=) signs

Reason mathematically and solve problems

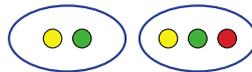
Pupils need to use and apply their understanding of, and fluency in, addition to:

- solve one-step problems that involve addition, using concrete objects and pictorial representations
- solve one-step problems that involve addition in familiar contexts, e.g. money

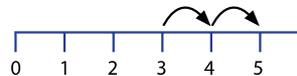
Mental strategies

- Use of models and images:

- concrete objects/pictorial representations



- number tracks and number lines



Reception

SUBTRACTION

Conceptual understanding and procedural fluency

To subtract successfully, pupils need to:

- understand subtraction as 'taking away' (counting back)
- subtract one-digit up to 10
- read, write and interpret mathematical statements involving subtraction ($-$) and equals ($=$) signs

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, subtraction to:

- solve one-step problems that involve subtraction, using concrete objects and pictorial representations
- solve one-step problems that involve subtraction in familiar contexts, e.g. money

Mental strategies

- Use of models and images:
 - concrete objects/pictorial representations



- number tracks and number lines: 'take away' (counting back)



MULTIPLICATION

Conceptual understanding and procedural fluency

To multiply successfully, pupils need to:

- understand multiplication through grouping small quantities
- understand the link between multiplication and doubling

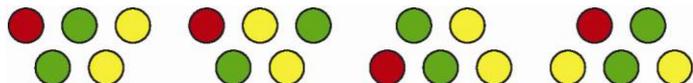
Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, multiplication to:

- solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
- solve one-step problems that involve multiplication in familiar contexts

Mental strategies

- Use of models and images:
 - concrete objects/pictorial representations



Reception

DIVISION

Conceptual understanding and procedural fluency

To divide successfully, pupils need to:

- understand division through sharing small quantities between 2, 5 and 10.

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, division to:

- solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations.

Mental strategies

- Use of models and images:

- concrete objects/pictorial representations

