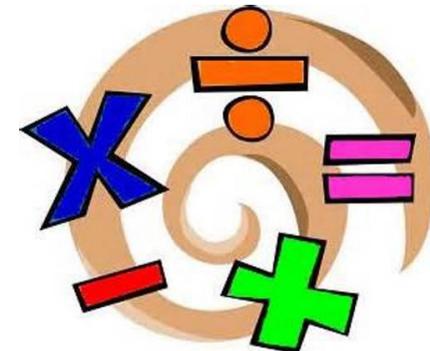


Culworth and Boddington CE Primary Academies



**Calculation handbook for
parents with children in
Year 1**



Progression towards standard written methods of calculation

INTRODUCTION

This calculation handbook has been written in line with the school calculation policy and the programmes of study taken from the revised National Curriculum for Mathematics (2014). It provides guidance on appropriate calculation methods and progression for each year group. The content is set out in yearly blocks under the following headings: addition, subtraction, multiplication and division.

Statements taken directly from the programme of study are listed in italics at the top of each section.

The Federation of Culworth and Boddington C of E Primary Academies uses the Big Maths resources to teach mental calculation strategies, including the key number facts that children will need to know called 'learnits.'

Children will use mental methods as their first port of call, when appropriate, but for calculations they cannot do in their heads, they will need to use an efficient method accurately and with confidence.

Within school, children will be given opportunities to deepen their understanding of concepts through a range of problems and real life situations, rather than moving on to the content of the next year group.

"Decision about when to progress should always be based on the security of pupils understanding and their readiness to progress to the next stage."

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AIMS OF THE HANDBOOK

- To enable parents to have a secure knowledge and understanding of the informal (mental) and formal written methods of calculations for all four operations taught in school.

Year 1

Addition - Year One

- *Given a number, identify one more*
- *Read, write and interpret mathematical statements involving addition (+) and the equals (=) sign*
- *Add one-digit and two-digit numbers within 20, including zero*
- *Solve missing number problems eg $10 + \square = 16$*

NB Ensure that children are confident with the methods outlined in the previous year's guidance before moving on.

Children will continue to practice counting on from any number e.g. *'Put five in your head and count on four.'*

Initially use a number track to count on for addition, counting on from the largest number:

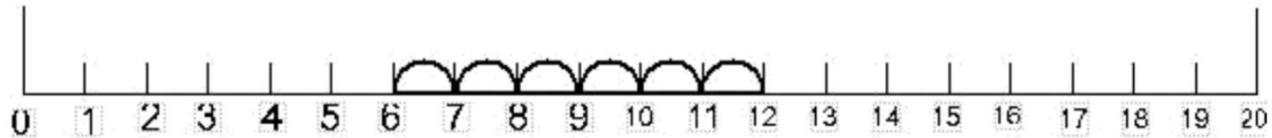


$$5 + 4 = 9$$

'Put your finger on number five. Count on (count forwards) four.'

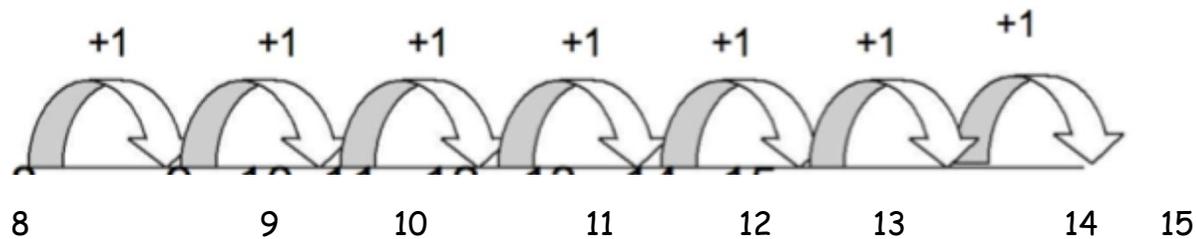
Then progress to a marked number line:

$$6 + 6 = 12$$



'Put your finger on number six and count on six'

$8 + 7 = 15$ 'put your finger on number eight and count on seven.'



Ensure children are confident with using a marked number line before moving on an empty number line (see year 2 guidance)

Continue to practice counting on from the largest number for addition with totals within 20.

Subtraction - Year One

- *Given a number, identify one less*
- *Read, write and interpret mathematical statements involving subtraction (-) and the equal (=) sign*
- *Subtract one-digit and two digit numbers within 20, including zero*
- *Solve missing number problems e.g. $20 - \square = 15$*

NB Ensure that children are confident with the methods outlined in the previous years' guidance before moving on.

Children will continue to practice counting back from a given number

Initially use a number track to count back for subtraction:

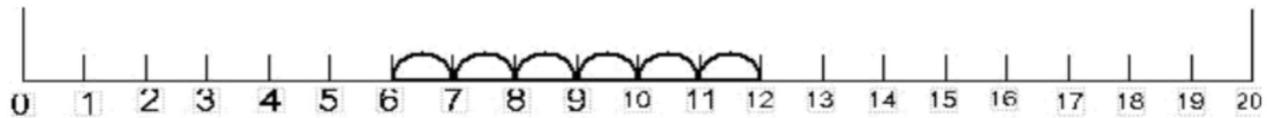


$$9 - 5 = 4$$

'Put your finger on number nine. Count back five.'

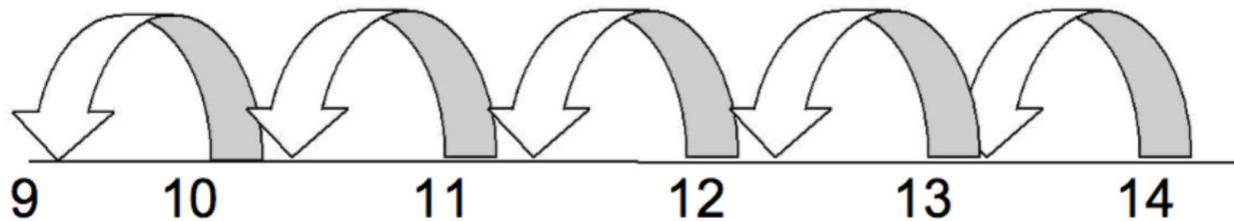
Then progress to a marked number line:

$$12 - 6 = 6$$



'Put your finger on number twelve and count back 6.'

$$14 - 5 = 9$$



'Put your finger on fourteen and count back five.'

NB Ensure children are confident using a marked number line before moving to an empty number line (see year 2 guidance).

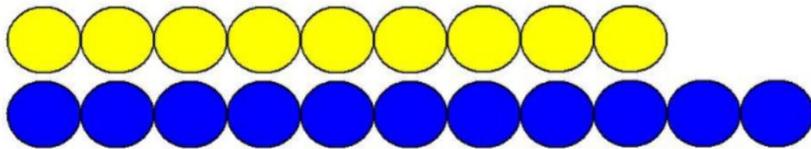
Continue practise counting back for subtraction with numbers within 20.

Counting on to find a difference:

Introduce complementary addition to find differences (only use for small differences). The use of models is extremely important here to understand the idea of 'difference'.

Count up from the smallest number to the largest to find the difference using resources, e.g. cubes, beads, number tracks/lines:

$$11 - 9 = 2$$



The difference between nine and eleven is two.

NB If, at any time, children are making significant errors, return to the previous stage in calculation.

Multiplication - Year One

- Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
- Count in multiples of twos, fives and tens (to the 10th multiple)

Children will count repeated groups of the same size in practical contexts. They will use the vocabulary associated with multiplication in practical contexts. They will solve practical problems that involve combining groups of 2, 5 or 10 e.g. socks, fingers and cubes.



'Six pairs of socks. How many socks altogether?'

'2, 4, 6, 8, 10, 12



'Three packs of 10 crayons. How many crayons altogether?'

'10, 20, 30'

Use arrays to support early multiplication

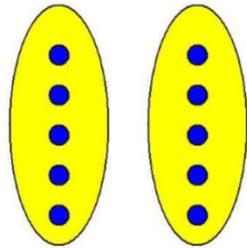


'Five groups of two faces. How many faces altogether?'

'2, 4, 6, 8, 10'

'Two groups of five faces. How many altogether?'

'5, 10'



'2 groups of 5'

'How many altogether?'

'5 + 5 = 10'

'Double 5 is 10'

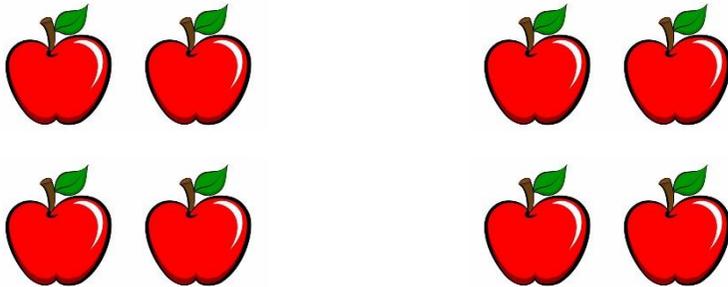
Continue to solve problems in practical contexts and develop the language of early multiplication, with appropriate resources, throughout Y1.

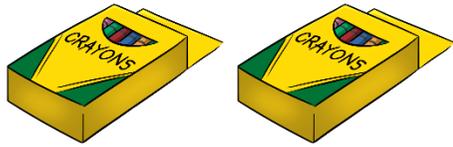
Division - Year 1

- *Solve one-step problems involving division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher*
- *Count in multiples of twos, fives and tens (to the 10th multiple)*

Children will start with practical sharing using a variety of resources. They will share objects into equal groups in a variety of situations. They will begin to use the vocabulary associated with division in practical contexts.

'Share these eight apples equally between two children. How many apples will each child have?'

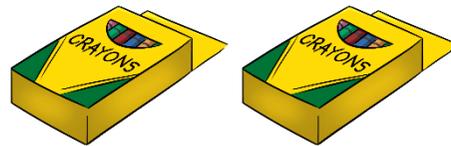




'Share 20 crayons between 2 pots.'

How many crayons are in each pot?'

Children will move from sharing to grouping in a practical way

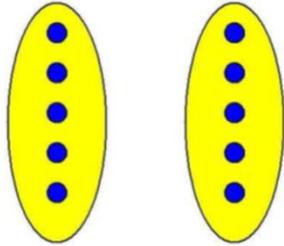


'Put 20 crayons into groups of 10. How many pots do we need?'

Use arrays to support early division



'How many faces altogether?' 'How many groups of 2?'



"How many groups of 5?"

'10 shared equally between 2 people.'

'Half of ten is five'

Continue to solve problems in practical contexts throughout Y1, and develop the language of early division, with appropriate resources.