



MELDRETH
Primary School

About our Calculation Policy

The following calculation policy has been devised to meet requirements of the National Curriculum 2014 for the teaching and learning of mathematics, and is also designed to give pupils a consistent and smooth progression of learning in calculations across the school. Please note that early learning in number and calculation in Reception follows the 'Development Matters' EYFS document, and this calculation policy is designed to build on progressively from the content and methods established in the Early Years Foundation Stage.

Age stage expectations

The calculation policy is organised according to age stage expectations as set out in the National Curriculum 2014. However it is vital that pupils are taught according to the stage that they are currently working at, being moved onto the next level when they are ready or working at a lower stage until they are secure enough to move on.

Providing a context for calculation

It is important that any type of calculation is given a real life context or problem solving approach to help build children's understanding of the purpose of calculation, and to help them recognise when to use certain operations and methods when faced with problems. This is a priority within calculation lessons.

Choosing a calculation method

Children need to be taught and encouraged to use the following processes in deciding what approach they will take to a calculation, to ensure they select the most appropriate method for the numbers involved...

Can I do it in my head?

Could I use some jottings to help me?

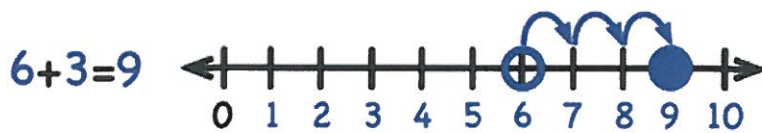
Should I use a written method to work it out?

Addition

Year 1 Add with numbers up to 20 Moving from adding on (aggregation) to combining sets (augmentation)

Use numbered number lines to add, by counting on in ones. Encourage children to start with the larger number and count on.

+1 +1 +1



Key skills for addition at Y1:

- Read and write words and numbers to 100
- Recall bonds to 10 and 20, and addition facts to 20
- Count to and across 100
- Count in multiples of 1 2, 5 and 10
- Interpret addition number sentences and solve missing box problems, using concrete objects and number line addition to solve them: $8 + 3 = \square$ $15 + 4 = \square$
- Solve simple 1-step problems involving addition, using objects, number lines and pictorial representations.

Bead strings or bead bars can be used to illustrate addition including bridging through ten by counting on 2 then counting on 3.



Vocabulary: add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line

Subtraction

Year 1 Subtract with numbers up to 20

Children consolidate understanding of subtraction practically, showing subtraction on their fingers, bead strings, using cubes etc. and in familiar contexts, and are introduced to more formal recording using number lines as below:

Subtract by taking away (reduction)

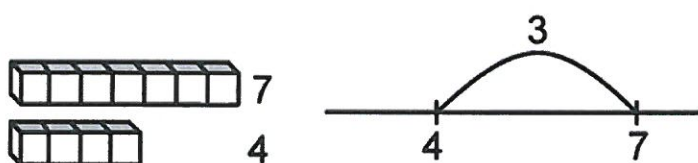


$$7 - 4 = 3$$



Count back in ones on a numbered number line to take away, with numbers up to 20:

Find the distance between (comparison)



The difference between 7 and 4 is 3.

“Seven is 3 more than four”

This will be introduced practically with the language ‘**find the distance between**’ and ‘**how many more?**’ in familiar contexts.

Mental subtraction Children should start recalling subtraction facts up to and within 10 and 20, and should be able to subtract zero.

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 (ie bead string, objects, cubes) and pictures, and missing number problems.
- Read and write numbers from 0 to 20 in numerals and words.

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

Multiplication

Year 1 Multiply with concrete objects, arrays and pictorial representations.

Amy needs five strawberries for each smoothie.

She is making five smoothies.
How many strawberries will she need?



Each smoothie needs two bananas. How many bananas are needed to make eight smoothies?



Children should have experience of counting equal group of objects in 2s, 5s and 10s.

Present practical problem solving activities involving counting equal sets or groups, as above.

Key skills for multiplication at Y1:

- Count in multiples of 2, 5 and 10.
- Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Make connections between arrays, number patterns, and counting in twos, fives and tens.
- Begin to understand doubling using concrete objects and pictorial representations.

Vocabulary: groups of, lots of, times, altogether, multiply, count, array

Division

Year 1 Group and share small quantities

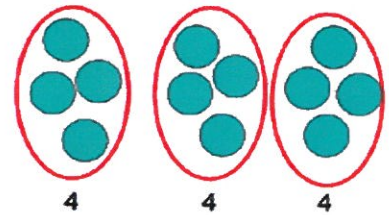
Grouping

How many groups of 4 can be made with 12 stars?



Sharing

There are 3 children on this table and there are 12 pieces of fruit to share between us. If we share them equally, how many will we each get?



Pupils should:

12 shared between 3 is 4

- Use lots of practical apparatus, arrays and picture representations
- Be taught to understand the difference between **grouping** objects (How many groups of 2 can you make?) and **sharing** (Share these sweets between 2 people)
- Be able to count in multiples of 2s, 5s and 10s.
- Find half of a group of objects by sharing into 2 equal groups, and $\frac{1}{4}$ of a group of objects by sharing into 4 equal groups.

Key skills for division at Y1:

- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations arrays with the support of the teacher
- Through grouping and sharing small quantities, pupils begin to understand, division, and finding simple fractions of objects, numbers and quantities.
- They make connections between arrays, number patterns, and counting in twos, fives and tens.

Vocabulary: share, share equally, one each, two each..., group, groups of, lots of