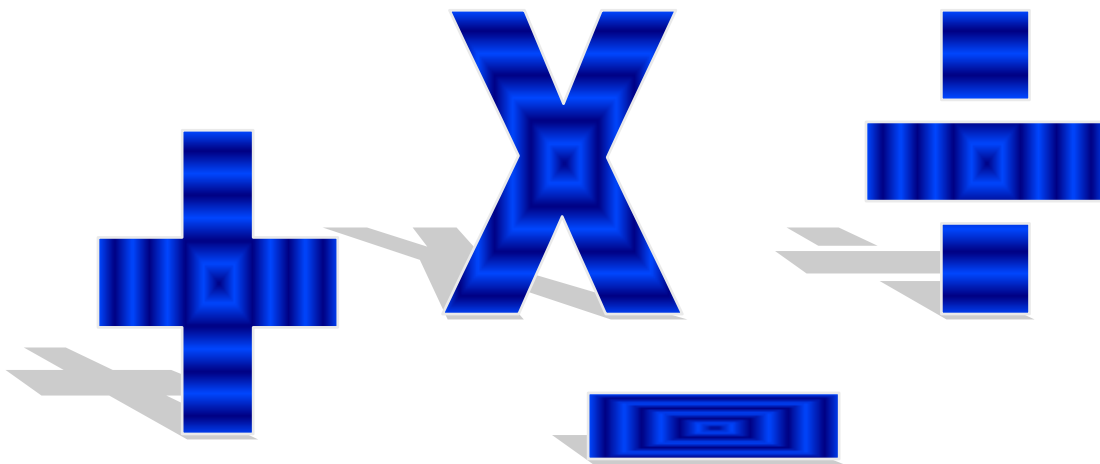




**Helping
your child
with calculations
in year 2.**



Calculation Policy for Parents.

This booklet has been designed as a guide for parents, to help them understand how the four operations (addition, subtraction, multiplication and division) are taught in our School.

The maths work your child is doing at school may look very different to the kind of 'sums' you remember. The teaching of maths is now about developing an understanding of number and not just knowing which kind of calculation to perform in a given situation. Initially children work through practical, oral and mental activities as children begin to understand these ideas they develop ways of recording to support their thinking. These informal methods become more efficient and succinct and lead to efficient written methods.

The calculation policy is organised according to age stage expectations as set out in the National Curriculum 2014, **however pupils will be taught according to the level that they are currently working at**, being moved onto the next level as soon as they are ready, or working at a lower stage until they are secure enough to move on. This means a pupil currently achieving below the average level is likely to be working at the level of year groups below, and vice versa for pupils working at above average levels. Please feel welcome to come and ask your child's class teacher to clarify with you the stages / methods your child is working on if you are unsure.

If your child gets 'stuck' on a particular stage it is always worth revisiting the previous stage or stages to review their understanding.

Talk to your child about how you work things out.



Ask your child to explain their thinking.

When faced with a calculation problem, encourage your child to ask...

1. Can I do this in my head?

2. Could I do this in my head using drawings or jottings to help?



4. Do I need to use a calculator?

3. Do I need to use a written method?

Also help your child to estimate and then check their answer. Encourage them to ask...

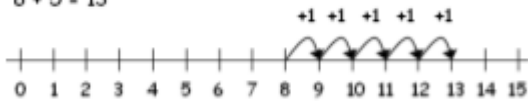
Is the answer sensible?



Addition - add with 2 digit numbers

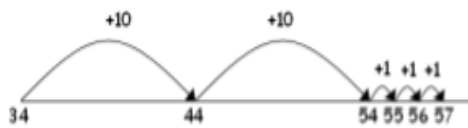
Children are taught to understand addition as combining two sets or more and counting on.

$$8 + 5 = 13$$



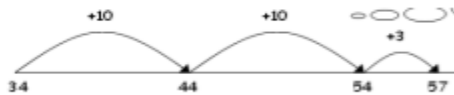
Children then begin to use number lines and are encouraged to count on from the largest number.

$$34 + 23 = 57$$



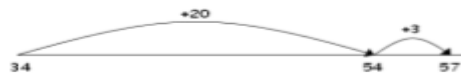
Children then move on to drawing their own empty number line. Children count on in tens and units (ones).

$$34 + 23 = 57$$



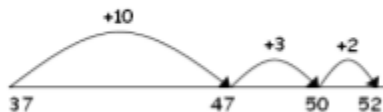
Then helping children to become more efficient by adding the units in one jump (by using the known fact $4 + 3 = 7$).

$$34 + 23 = 57$$



Followed by adding the tens in one jump and the units in one jump.

$$37 + 15 = 52$$



Children can use known number facts to bridge through 10 e.g. $7 + 3 = 10$
So $5 - 3 = 2$
So there are 2 left to count on.
This links to how we can add up in our heads.

$$34 + 23 = 57$$

Children will move onto columnar addition. They will initially be supported in this by using practical

$$30 + 4$$

$$\underline{20 + 3}$$

$$50 + 7 = 57$$

equipment

Key number skills

Add a 2-digit number and ones
(e.g. $27 + 6$)

Add a 2-digit number and tens
(e.g. $23 + 40$)

Add pairs of 2-digit numbers
(e.g. $35 + 47$)

Add three one-digit numbers
(e.g. $5 + 9 + 7$)

Key vocabulary

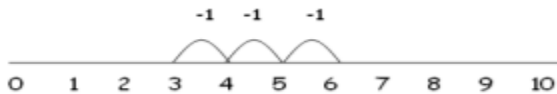
add, more, plus, and, make,
altogether, total, equal to,,
equals, double, most, count on,
number line

sum, tens, ones, partition,
addition, column, tens boundary

Subtraction - subtract with 2 digit numbers

Children are taught to understand subtraction as taking away (counting back) and finding the difference (counting up).

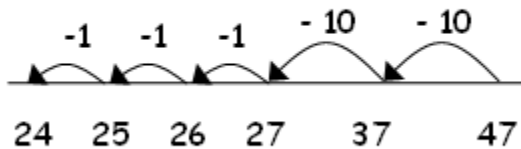
$$6 - 3 = \square$$



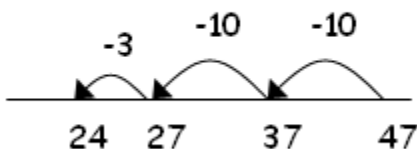
Children then move on to using number lines. The number line helps to show that we are looking for the difference between 6 and 3.

$$47 - 23 = 34$$

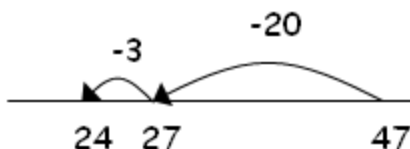
I have 47cm of ribbon. I cut off 23cm. How much ribbon do I have left?



Children move on from counting back in ones. To counting back in tens and ones.

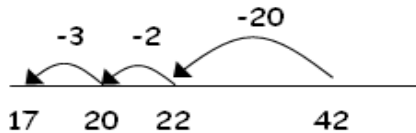


Then to counting back in tens and the ones in one chunk.



Then subtracting the tens in one jump and the ones in one jump.

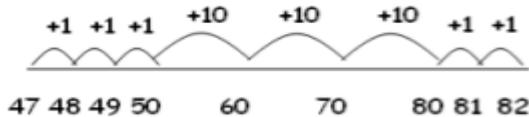
$$42 - 25 = 17$$



When children know $3 + 2 = 5$, they can use this to help them bridge through 10.

$$82 - 47 = 35$$

There were 82 seats on the train and 47 people got on the train. How many more people could sit on the train?



Counting on. If the numbers in a calculation are close together or near to a multiple of 10 children can use the counting on method. Starting from the smallest number and counting up to the largest number. Finding out how many are in between.

Key number skills

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 cannot be done in any order.

Recognise and use inverse relationship between addition and subtraction, to check calculations and missing number problems.

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

Multiplication - multiply using arrays and repeated addition

Children are taught to understand multiplication as repeated addition and scaling. It can also describe an array.

$$2 \times 4 =$$

Each child has two eyes. How many eyes do four children have?

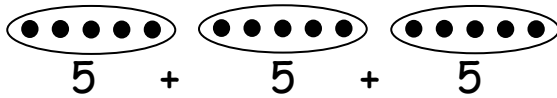


$$2 + 2 + 2 + 2$$

Drawing pictures is very useful to help children visualise the problem.

$$5 \times 3 =$$

There are 5 cakes in a pack. How many cakes are in three packs?

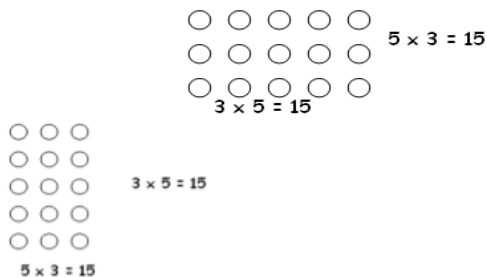


$$5 + 5 + 5$$

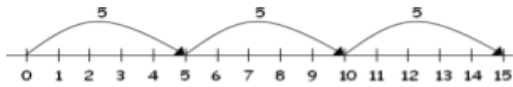
Dots or tally marks are often grouped. This shows 3 lots of 5.

$$5 \times 3 =$$

A chew costs 5p. How much do 3 chews cost?



Drawing an array gives children an image of the answer. It also helps develop the understanding that 5×3 is the same as 3×5 .



$$5 \times 3 = 5 + 5 + 5$$

Key skills

Count in steps of 2, 3 and 5 from 0, and in 10s from any number.

Recall and use multiplication facts from the 2, 5 and 10 multiplication tables, incl. recognising odds and evens.

Write and calculate number statements **using the \times and $=$ signs.**

Show that multiplication can be done in any order (commutative).

Solve a range of problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication facts.

Repeated addition can easily be shown on a number line.

Key vocabulary

groups of, lots of, times, array, altogether, multiply, total, count up in...

multiplied by, column, row, repeated addition, commutative, sets of, equal groups, _ times as big as, once, twice, three times etc.

Division - Group and share, using the \div sign

Children are taught to understand division as repeated subtraction, sharing and grouping.

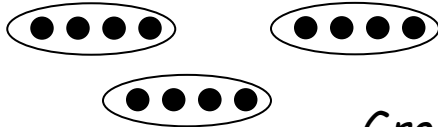
$$12 \div 4 =$$

12 apples are shared equally between 4 baskets. How many apples are in each basket?

sharing between 4

$$12 \div 4 =$$

4 apples are packed in a basket. How many baskets can you fill with 12 apples?

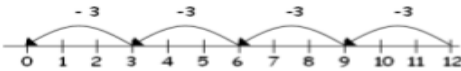


Grouping in 4's

Dots or tally marks can either be shared out one at a time e.g. one for you, one for you

or
split up into groups.

$$12 \div 3 = 4$$



Division can be done by repeated subtraction along a numberline.

How many times can I take 3 away from 12?

Key skills

- *Count in 2s, 3s and 5s from 0.
- *Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, recognising odds and evens.
- *Calculate statements for multiplication and division within the multiplication tables, writing them using \times , \div and $=$ signs.
- *Show that division cannot be done in any order.
- *Solve problems in context using materials, arrays, repeated addition, mental methods, multiplication and division facts.

Key vocabulary

share, share equally, one each, two each..., group, groups of, lots of, array
divide, divided by, divided into, division, grouping, number line, left, left over

