

Wellstead Maths Policy
Division



Wellstead Primary School

Written Calculation Policy for Maths

The calculation policy has been devised to meet the requirements of the National Curriculum 2014 for the teaching and learning of mathematics. It is designed to give a clear progression of learning in calculations across the school. Early learning in number and calculation in Reception (Early Years) follows the 'Development Matters' EYFS document. This policy builds on this learning.

END OF YEAR EXPECTATIONS

This calculation policy has been devised according to the end of year expectations as set out in the National Curriculum 2014, **however** it is vital that children are taught according to the development stage that they are currently working at. Children will be moved onto the next level when the class teacher feels they are secure enough to move on. Some children may be working at a lower than expected level and they will be moved onto the next level accordingly when the class teacher feels they are secure enough to do so.

PROVIDING A CONTEXT FOR CALCULATION

It is important that any type of calculation is given within a real life context or problem solving approach to help build children's understanding of the purpose of calculations. This also helps them to develop skill in choosing appropriate number operations and strategies to solve the calculation.

CHOOSING A CALCULATION METHOD:

Children need to develop skill in deciding which appropriate method to use to solve calculations, depending on the numbers involved.

They will be encouraged to consider which approach to take:

Can I do it in my head using a mental strategy?

Could using jottings help me?

Should I use a written method to work out the answer?

Calculation Strategies

Progression in Division - end of year expectations

EARLY YEARS

Key skills:

- Know double facts to $5+5$; extend to 10

Vocabulary:

count , halve, how many?

Solving problems involving halving

Practical experiences; through songs, rhymes and doubling activities e.g.

6 apples shared between 2 children. How many apples each?



Children need to be able to:

- Count sets of objects accurately

Calculation Strategies

Progression in Division - end of year expectations

Year 1

Key skills:

- Count in multiples of 2, 5 and 10
- Know double facts to 10; extend to 20
- Derive halves to 20

Vocabulary:

Divide, share, groups of, halve

Solve one step problems involving division

Using a range of practical resources

Sharing

8 apples shared between 2 people. How many apples each?

$$8 \div 2 =$$



Grouping

I have 12 stars. I put them into groups of 4. How many groups can I make?

$$12 \div 4 =$$



Children need to be able to:

- Partition numbers into multiples of 10s & 1s
- Understand that multiplication & division are inverse operations of each other & derive facts
- Mentally calculate e.g. How many 2s make 10? How many 5s in 20?

Calculation Strategies

Progression in Division - end of year expectations

Year 2

Key skills:

- Count in multiples of 2, 3, 5 and 10
- Recognise odd and even numbers
- Know double facts to 20; double facts for multiples of 10

Vocabulary:

Division, divide, share, groups of, equal groups, halve, repeated subtraction, how many left over?, remainder

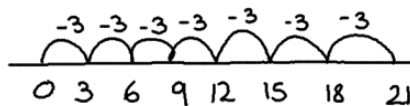
Calculate mathematical statements for division

e.g, $21 \div 3 =$

Building on practical activities of sharing and grouping

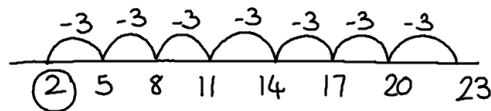
Using repeated subtraction on an unstructured number line

$$21 \div 3 = 7$$



including remainders

$$23 \div 3 = 7 \text{ r } 2$$



Children need to be able to:

- Partition numbers into multiples of 100s, 10s & 1s
- Know that multiplication of 2 numbers can be done in any order (commutative)
- Understand that multiplication & division are inverse operations of each other & derive facts
- Mentally calculate e.g. How many 10s make 80? How many 5s in 35?

Calculation Strategies

Progression in Division - end of year expectations

Year 3

Key skills:

- Count in multiples of 3, 4, 8, 50 and 100
- Recall and use multiplication and division facts for 3, 4 and 8 multiplication tables

Vocabulary:

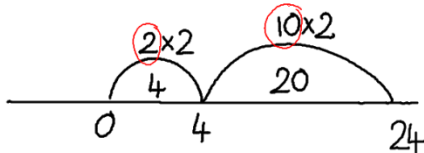
Division, divide, share, groups of, equal groups, halve, repeated subtraction, how many left over?, remainder, inverse

Calculate mathematical statements for multiplication and division using the multiplication tables that they know, including 2-digit x 1-digit numbers

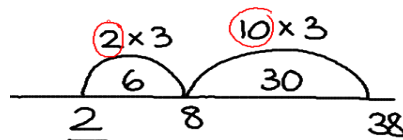
Building on repeated subtraction on an unstructured number line

Using chunking on a number line

$$24 \div 2 = 12$$



$$38 \div 3 = 12 \text{ r } 2$$



Children need to be able to:

- Partition numbers into multiples of 100s, 10s & 1s
- Understand that multiplication & division are inverse operations of each other & derive facts
- Calculate halves
- Mentally calculate e.g. How many 10s make 80? How many 8s in 48?

When the class teacher feels that the children show that they are secure and confident using the grid method, they will be moved onto short division - the bus stop method (see Y4)

Calculation Strategies

Progression in Division - end of year expectations

Year 4

Key skills:

- Count in multiples of 6, 7, 9, 25 and 1000
- **Recall multiplication and division facts for multiplication tables up to 12x12**

Vocabulary:

Division, divide, share, groups of, equal groups, halve, repeated subtraction, how many left over?, remainder, inverse, short division, 'bus stop method', 'carry', multiple, factor

Divide

2-digit ÷ 1-digit numbers

3-digit ÷ 1-digit numbers

Building on chunking on a number line

Using chunking method

$$72 \div 6 = 12$$

$$\begin{array}{r} 72 \\ - 60 \quad (\underline{10} \text{ lots of } 6) \\ \hline 12 \\ - 12 \quad (\underline{2} \text{ lots of } 6) \\ \hline 00 \quad (12 \text{ lots of } 6 \text{ altogether}) \end{array}$$

Using short division

(calculations not involving remainders)

$$496 \div 4 =$$

$$\begin{array}{r} 124 \\ \hline 4) 49\overset{1}{6} \end{array}$$

Children need to be able to:

- **RECALL ALL MULTIPLICATION FACTS TO 12X12**
- Partition numbers into multiples of 100s, 10s & 1s
- Understand that multiplication & division are inverse operations of each other & derive facts
- Calculate halves
- Mentally calculate e.g. How many 100s make 800? How many 7s in 350?

Calculation Strategies

Progression in Division - end of year expectations

Year 6

Key skills:

- Count forwards and backwards in steps of 10, 100, 1000, 10000, 100000
 - Identify multiples and factor pairs
 - Recall prime numbers to 19
 - Multiply and divide numbers mentally drawing upon known facts
 - Multiply and divide whole numbers and decimal numbers by 10, 100 and 1000
- Recognise and use square numbers $5^2(5 \times 5)$ and cube numbers $5^3(5 \times 5 \times 5)$

Vocabulary:

Division, divide, share, groups of, equal groups, halve, repeated subtraction, how many left over?, remainder, inverse, short division, 'bus stop method', 'carry', multiple, factor, quotient, prime number, composite (non-prime) numbers, common factor

Divide multi-digit numbers up to 4-digits

4-digit \div 1 digit numbers

4-digit \div 2-digit numbers

Building on short division

$$28.5 \div 5 =$$

$$\begin{array}{r} 05.71 \\ 5 \overline{) 28.355} \end{array}$$

Building on long division

Moving to

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{30} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$