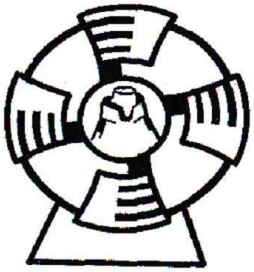
An Daras
Multi Academy Trust

Windmill Hill Academy

Lower KS2 Calculation Policy for Addition, Subtraction, Multiplication and Division

Updated for September 2014

Calculation Policy for Mathematics

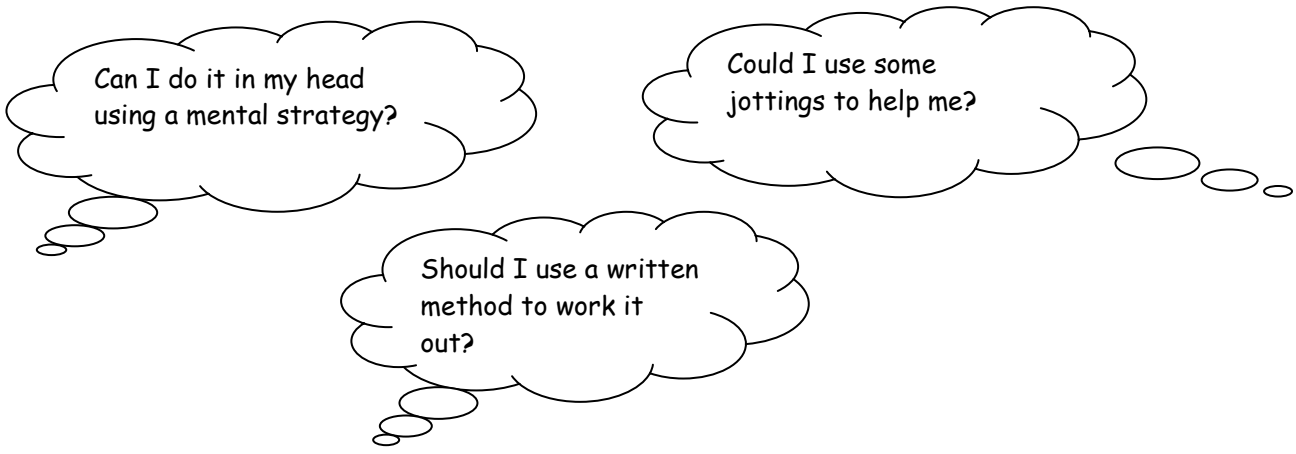


The following calculations policy has been devised to meet the requirements of the National Curriculum 2014 for the teaching and learning of mathematics, and also to give pupils a consistent and smooth progression of learning in calculation across the school. Please note that early learning in number and calculation in YF follows the 'Development Matters EYFS document and this calculation policy is designed to build on progression 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, working at a lower stage until they are secure enough to move on. Children must consolidate their learning with mathematical challenges in various contexts before moving on to the next stage.

Providing a context for calculation
It is important that any 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 must be a priority within calculation lessons.

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



To work out a tricky calculation	Approximate	Calculate	Check it!

Overview of Lower KS2

In the lower juniors, children build on the concrete and conceptual understandings they have gained in the Infants to develop a real mathematical understanding of the four operations, in particular developing arithmetical competence in relation to larger numbers. In addition and subtraction, they are taught to use place value and number facts to add and subtract numbers mentally and will develop a range of strategies to enable them to discard the 'counting in ones' or fingers-based methods of the infants. In particular, they will learn to add and subtract multiples and near multiples of 10, 100 and 1000, and will become fluent in complementary addition as an accurate means of achieving fast and accurate answers to 3-digit subtractions. Standard written methods for adding larger numbers are taught, learned and consolidated, and written column subtraction is also introduced. This key stage is also the period during which all the multiplication and division facts are thoroughly memorised, including all facts up to the 12 x 12 table. Efficient written methods for multiplying or dividing a 2-digit or 3-digit number by as single-digit number are taught, as are mental strategies for multiplication or division with large but friendly numbers, e.g. when dividing by 5 or multiplying by 20. Children will develop their understanding of fractions, learning to reduce a fraction to its simplest form as well as finding non-unit fractions of amounts and quantities. The concept of a decimal number is introduced and children consolidate a firm understanding of one-place decimals, multiplying and dividing whole numbers by 10 and 100.

+ Addition +

Children should not be made to go onto the next stage if:

1) **they are not ready.**
2) **they are not confident.**

- ✓ **Children should be taught through real life experiences and word problems.**
- ✓ **Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.**
- ✓ **Children should be encouraged to approximate their answers before calculating.**
- ✓ **Children should be encouraged to check their answers after calculation using an appropriate strategy.**

Year 3 +

Key vocabulary: add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, plus, addition, column, tens boundary, **hundreds boundary, increase, vertical, _carry', expanded, compact**

Key skills for addition at Y3:

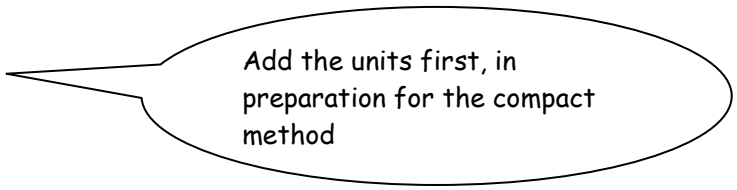
- Read and write numbers to 1000 in numerals and words.
- Add 2-digit numbers mentally, incl. those exceeding 100.
- Add a three-digit number and ones mentally (175 + 8)
- Add a three-digit number and tens mentally (249 + 50)
- Add a three-digit number and hundreds mentally (381 + 400)
- Add pairs of 'friendly' 3-digit numbers, e.g. 320 + 450
- Begin to add amounts of money using partitioning.
- Estimate answers to calculations, using inverse to check answers.
- Solve problems, including missing number problems, using number facts, place value, and more complex addition.
- Recognise place value of each digit in 3-digit numbers (hundreds, tens, ones.)
- Continue to practise a wide range of mental addition strategies, ie. number bonds, adding the nearest multiple of 10, 100, 100 and adjusting, using near doubles, partitioning and recombining
- Use expanded column addition to add two or three 3-digit numbers or three 2-digit numbers
- Begin to use compact column addition to add numbers with three digits.
- Begin to add like fractions. (E.g. $^{3}/_{8} + {}^{1}/_{8} + {}^{1}/_{8}$)
- Recognise fractions that add to 1. (E.g. ¼ + ¾ or $^{3}/_{5} + {}^{2}/_{5}$)

- ✓ **Continue to use mental methods first**
- ✓ Add numbers with up to 3-digits
- ✓ Continue to use partitioned column addition to add 3-digit and 2- digit numbers

236 + 73 200+30+ 6
+ 70+ 3
200+100+9 =309

- ✓ Introduce the expanded column addition method:

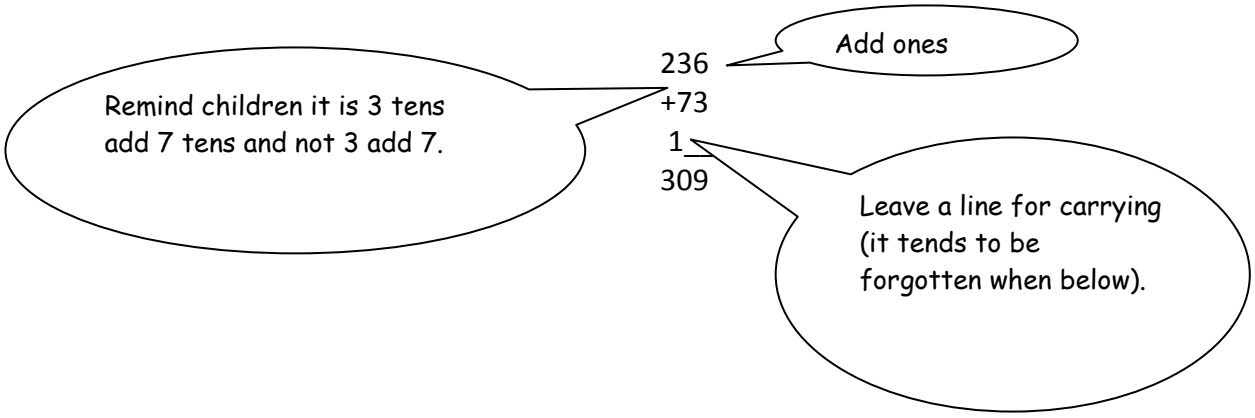
236
+73
9
100
200
309



In order to carry out this method of addition:

- ✓ Children need to recognise the value of the hundreds, tens and units without recording the partitioning.
- ✓ Pupils need to be able to add in columns.

Children who are very secure with this method should be moved to the compact method of addition. They should then be introduced to 'carrying'.
They compare the expanded method with the compact method to develop their understanding of the process and the reduced number of steps involved.



Year 4

Key vocabulary: add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, plus, addition, column, tens boundary, hundreds boundary, increase, vertical, „carry", expanded, compact, **thousands, hundreds, digits, inverse**

Key skills for addition at Y4:

- Select most appropriate method: mental, jottings or written and explain why.
- Recognise the place value of each digit in a four-digit number.
- Round any number to the nearest 10, 100 or 1000.
- Estimate and use inverse operations to check answers.
- Solve 2-step problems in context, deciding which operations and methods to use and why.
- Find 1000 more or less than a given number.
- **Continue to practise a wide range of mental addition strategies**, ie. number bonds, add the nearest multiple of 10, 100, 1000 and adjust, use near doubles, partitioning and recombining.
- Add numbers with up to 4 digits using the formal written method of column addition
- Solve 2-step problems in contexts, deciding which operations and methods to use and why.

Estimate and use inverse operations to check answers to a calculation.
Add like fractions, e.g. $^3/_5 + {}^4/_5 = {}^7/_5 = 1\ {}^2/_5$.
Be confident with fractions that add to 1 and fraction complements to 1. (E.g. $^2/_3 + ? = 1$)

Children will be encouraged to use mental methods first.

Informal:

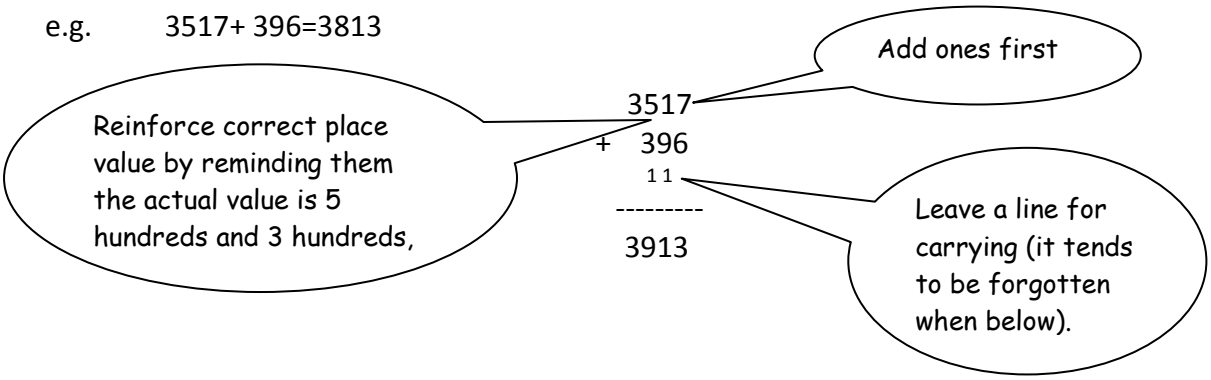
- ✓ They will continue to use pencil and paper methods, e.g. number lines, to support, record or explain calculations, achieving consistent accuracy.

Formal Written

Add numbers up to 4-digits

Children will continue to partition as in Y3 (see above), moving to a more compact column method.

e.g. 3517+ 396=3813



- ✓ Apply this money in context e.g. money and measurement values.

Using similar methods, children will:

- ✓ add several numbers with different numbers of digits;
- ✓ begin to add two three-digit sums of money, with or without adjustment from the pence to the pounds;
- ✓ know that the decimal points should line up under each other, particularly when adding or subtracting mixed amounts, e.g. £3.59 + 78p.

Subtraction

Children should not be made to go onto the next stage if:

1) they are not ready.
2) they are not confident.

- ✓ **Children should be taught through real life experiences and word problems.**
- ✓ **Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.**
- ✓ **Children should be encouraged to approximate their answers before calculating.**
- ✓ **Children should be encouraged to check their answers after calculation using an appropriate strategy.**

ARE STANDARDS THAT WE EXPECT THE MAJORITY OF CHILDREN TO ACHIEVE.

Approximate,
Calculate,
Check it mate!

Year 3

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 **exchange, decrease, hundreds, value, digit**

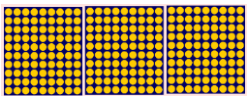
Key skills for subtraction at Y3:

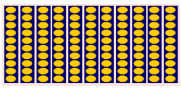
 Subtract mentally a: **3-digit number and ones, 3-digit number and tens, 3-digit number and hundreds** .

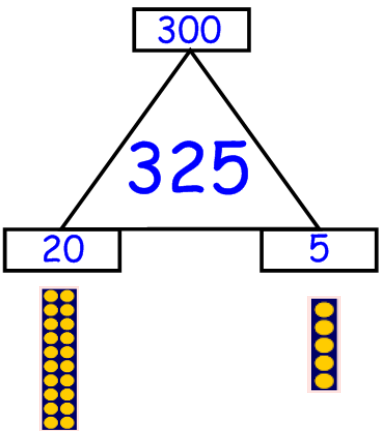
- Estimate answers and use inverse operations to check.
- Solve problems, including missing number problems.
- Find 10 or 100 more or less than a given number.
- Recognise the place value of each digit in a 3-digit number.
- Counting up differences as a mental strategy when numbers are close together or near multiples of 10 (see examples above)
- Read and write numbers up to 1000 in numerals and words.
- Practise mental subtraction strategies, such as subtracting near multiples of 10 and adjusting (e.g. subtracting 19 or 21), and select most appropriate methods to subtract, explaining why.
- Use counting up as an informal written strategy for subtracting pairs of three-digit numbers,
- Begin to use partitioning for expanded columnar addition,

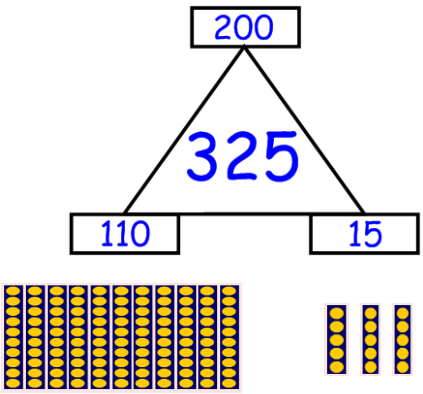
- Subtracting with 2 and 3-digit numbers

Children must continue to develop their understanding of partitioning beyond hundreds, tens and ones, e.g.325 can be partitioned in a variety of ways, such as 325= 300 + 10 + 15 = 200 + 110 + 15… etc

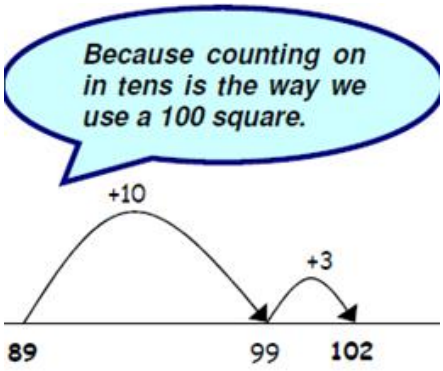




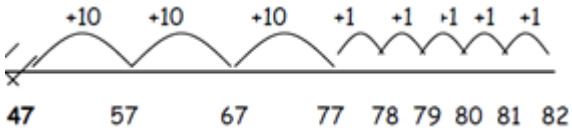




Continue to count back.
Continue to reinforce counting on as a strategy for close-together numbers (e.g 121-118) and also for numbers that are near multiples of 10,100,100 or £s etc).



Start with the smallest number and count on in tens. Finally count on the remaining ones.

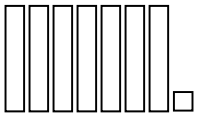


Introduce the partitioned method where no exchanging is required.

89 – 35 =54

80 + 9
- 30 + 5
50 + 4 = 54

Introduce 'exchanging' through practical subtraction. Make the larger numbers with Base 10 or Cuisenaire. Then subtract 47 from it.

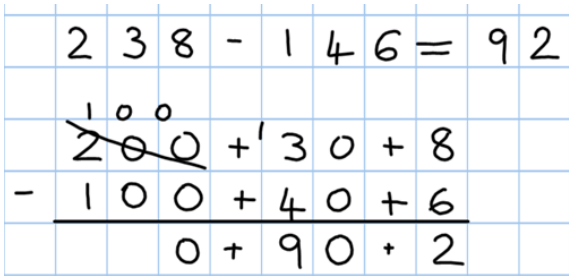


Before subtractiong 7 they will need to exchange a row of 10 units. Then subtract 7, and subtract 4 tens.

60 1
70 + 2
-40 + 7
20 + 5

When learning to 'exchange', explore 'partitioning in different ways so that pupils understand that when you exchange the value stays the same ie 72 = 70+2 = 60+12=50+22. Emphasise that the value hasn't changed; we have just partitioned it in a different way

Once pupils are secure with the understanding of "exchanging", they can use the partitioned column method to subtract any 2 and 3-digit numbers.



Subtracting money: partition into e.g. £1 + 30p + 8p

Approximate,
Calculate,
Check it mate!

Year 4

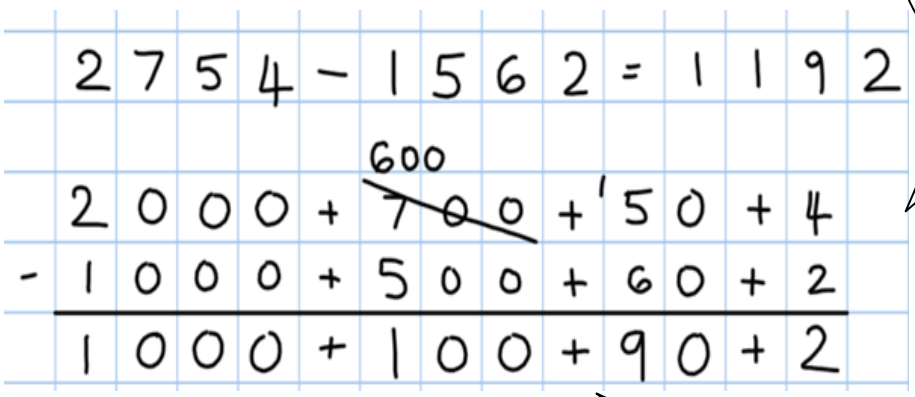
Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, distance be-tween, how many more, how many fewer / less than, most, least, count back , how many left, how much less is_? difference, count on, strategy, partition, tens, units exchange, decrease, hundreds, value, digit, **inverse**

Key skills for subtraction at Y4:

- Subtract by counting on where numbers are close together or they are near to multiples of 10, 100 etc.
- Children select the most appropriate and efficient methods for given subtraction calculations.
- Estimate and use inverse operations to check answers.
- Solve addition and subtraction 2-step problems, choosing which operations and methods to use and why.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Find 1000 more or less than a given number.
- Count backwards through zero, including negative numbers.
- Recognise place value of each digit in a 4-digit number Round any number to the nearest 10, 100 or 1000
- Solve number and practical problems that involve the above, with increasingly large positive numbers.

Use expanded column subtraction for 3-digit and 4-digit numbers
Use complementary addition to subtract amounts of money, and for subtractions where the larger number is a near multiple of 1000 or 100
E.g. 2002 – 1865 is
Subtract like fractions, e.g. ¼ + $^{1}/_{8}$ = $^{3}/_{8}$
Use fractions that add to 1 to find fraction complements to 1, e.g. 1 – $^{2}/_{3}$ = $^{1}/_{3}$

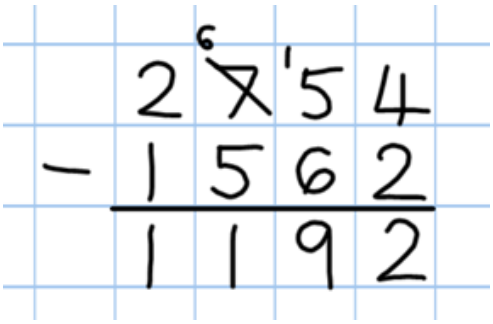
- Subtract up to 4-digit numbers.
- Children continue to check a calculation to see if they can carry out it out mentally.
- A variety of mental strategies must be taught and practised, including counting on to find the difference where numbers are closer together, or where it is easier to count back. See previous for methods.
- Partitioned column subtraction with „exchanging" (decomposition):



As introduced in Y3 but moving towards more complex numbers and values. Use place value counters to

Subtracting money: partition into £1 + 30 +5

Children should then move to a more compact method



To introduce the compact method, ask children to perform a subtraction calculation with the familiar partitioned column subtraction then display the compact version for the calculation they have done. Ask pupils to consider how it relates to the method they know, what is similar and what is different, to develop an understanding of it.

Always encourage children to consider the best method for the numbers involved—mental, counting on, counting back or writ-ten method.

Give opportunities to apply this method to money

Multiplication

Children should not be made to go onto the next stage if:

1) they are not ready.
2) they are not confident.

- ✓ **Children should be taught through real life experiences and word problems.**
- ✓ **Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.**
- ✓ **Children should be encouraged to approximate their answers before calculating.**
- ✓ **Children should be encouraged to check their answers after calculation using an appropriate strategy.**

Year 3

Key vocabulary: groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated ad-dition, column, row, commutative, sets of, equal groups, times, _times as big as, once, twice, three times..., **partition, grid method, multiple, product, tens, units, value**

Key skills for multiplication:

- Recall and use multiplication facts for the **2, 3, 4, 5, 8 and 10** multiplication tables, and multiply multiples of 10.
- Multiply whole numbers by 10 and 100.

  Use place value and number facts in mental multiplication. e.g. 3x14 as 3x10 and 3x4.
- Write and calculate number statements using the multiplication tables they know, including **2-digit x single-digit**, drawing upon mental methods, and progressing to reliable written methods.
- Solve multiplication problems, including missing number problems.
- Solve simple problems in contexts, deciding which operations and methods to use.
- Develop efficient mental methods to solve a range of problems e.g. using commutativity (**4 × 12 × 5** = 4 × 5 × 12 **= 20 × 12** = 240) and for missing number problems x 5 = 20, 3 x = 18, x = 32 and partitioning to partition teen numbers to multiply by a single digit number.
- Double numbers up to 50

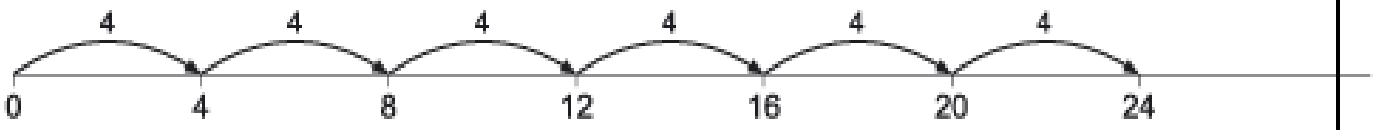
Written

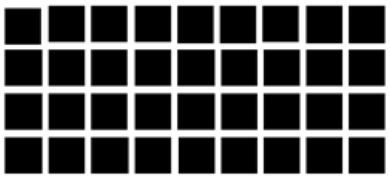
Use partitioning (grid multiplication) to multiply 2-digit and 3-digit numbers by 'friendly' single digit numbers.

Children must be able to:

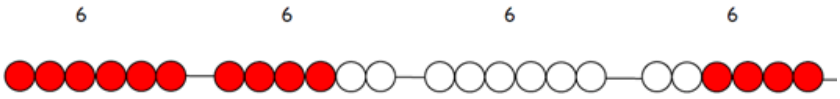
- Partition numbers into tens and units
- Multiply multiples of ten by a single digit (e.g. 20 x 4) using their knowledge of multiplication facts and place value
- Recall and work out multiplication facts in the **2, 3, 4, 5, 8 and 10** times tables.
- Work out multiplication facts not known by repeated addition or other taught mental strategies (e.g. by commutative law, working out near multiples and adjust-ing, using doubling etc.) Strategies to support this are repeated addition using a number line, bead bars and arrays:

For example, they find 6 fours by making 6 hops of 4.





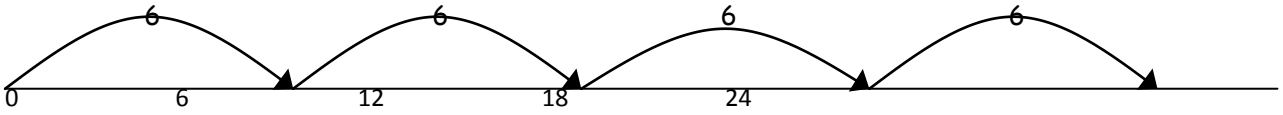
9 x 4 = 36



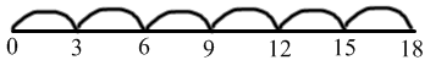
Children **understand the relationship between multiplication and division** . For example, they state two multiplication sentences and two division sentences that relate to a particular array, for example:

They use the image of an array to explain why, for example, 2 × 5 gives the same answer as 5 × 2. They also use the image to show how many fives make 10 and how many twos make 10.

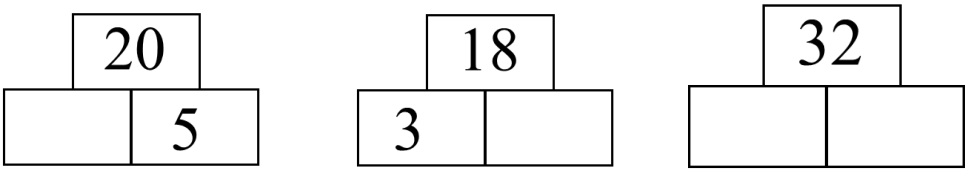
Children should use number lines or bead bars to support their understanding.



How many sides do six triangles have?



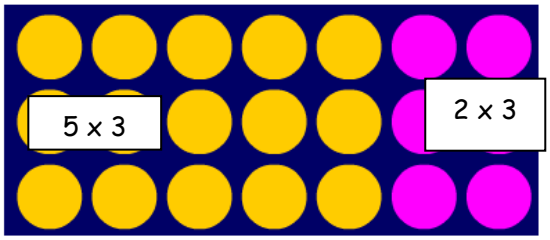
- **Using symbols to stand for unknown numbers to complete equations using inverse operations**



☐ x 5 = 20 3 x △ = 18 ☐ x ○ = 32

- **Partitioning**

Children use partitioning to encourage them to us knowledge of 2, 5 and 10 times tables to work out multiples of 7, e.g. partition 7 into 5 and 2 to calculate 7 x 3, i.e.

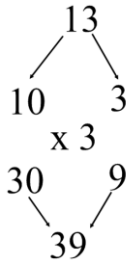


7 x 3		
5 x 3	+	2 x 3
15	+	6
	21	

Children use partitioning to **multiply two-digit numbers by one-digit numbers**. For example, they work out 13 × 3 by finding 10 × 3 and adding 3 × 3. They record their working using informal methods:

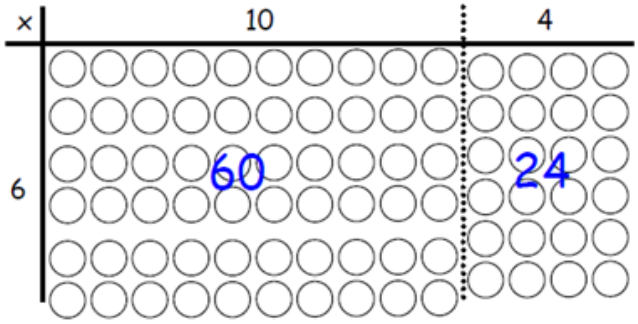
$$13 \times 3 = \underset{3}{(10)} + \underset{3}{(10)} + \underset{3}{(10)}$$
$$= 30 + 9$$
$$= 39$$

or



- Introduce the grid method for multiplying a 2-digit by single – digits,

Initially, link the layout to an array



Eg. 23 x 8 = 184

X	20	3
8	160	24

Introduce the grid method with children physically making an array to represent the calculation (e.g. make 8 lots of 23 with 10s and 1s place value counters), then translate this to grid method format

Year 4

Key vocabulary: groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, array, column, row, commutative, groups of, sets of, lots of, equal groups, times, multiply, times as big as, once, twice, three times... partition, grid method, total, multiple, product, sets of, **inverse**

Key skills for multiplication at Y4:

- Count in multiples of 6, 7, 9, 25 and 1000
- Recall multiplication facts for **all multiplication tables up to 12 x 12.**
- Multiply whole numbers and one-place decimals by 10, 100, 1000
- Multiply multiples of 10, 100, 1000 by single digit numbers. (E.g. 300 x 6 or 4000 x 8)
- Use understanding of place value and number facts in mental multiplication. (E.g. 36 x 5 is half of 36 x 10 and 50 x 60 = 3000)
- Partition 2-digit numbers to multiply by a single-digit number mentally. (E.g. 4 x 24 as 4 x 20 and 4 x 4)
- Multiply near multiples using rounding. (E.g. 33 x 19 as 33 x 20 – 33)
- Find doubles to double 100 and beyond using partitioning
- Begin to double amounts of money. (E.g. £35.60 doubled = £71.20.)
- Use commutativity and other strategies mentally 3 x 6 = 6 x 3 , 2 x 6 x 5 = 10 x 6 , 39x7 = 30 x 7 + 9 x 7.
- Solve problems with increasingly complex multiplication in a range of contexts.
- Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)

<u>Written</u>

*Use a vertical written method to multiply a one-digit by a 3-digit number (ladder)

*Use an efficient written method to multiply a 2-digit number by a number between 10 and 20 by partitioning (grid method)

- **Multiply 2 and 3-digits by a single digit, using all multiplication tables to 12x12.**

Children should be able to:

- A**pproximate before they calculate**, and make this a regular part of their calculating, going back to the approximation to check the reasonableness of their answer. e.g:

  346 x 9 is approximately 350 x 10 = **3500**
  Record an approximation to check the final answer against.
- Multiply multiples of ten and one hundred by a single-digit, using their multiplication table knowledge.
- Recall all times tables **up to 12 x 12**

Children will continue to use arrays where appropriate leading into the grid method of multiplication.

Developing the grid method:

Eg. 136 x 5 = 680

X	100	30	6
5	500	150	30

500
150
+ 30
680

Encourage column addition to add accurately.

Move onto **short multiplication** (see Y5) if and when children are confident and accurate multiplying 2 and 3-digit numbers by a single digit this way, **and** are already confident in "carrying" for written addition.

Windmill Hill Academy

Division

Approximate,
Calculate,
Check it mate!

Year 3

Children should not be made to go onto the next stage if:

1) they are not ready.
2) they are not confident.

- ✓ **Children should be taught through real life experiences and word problems.**
- ✓ **Children should be encouraged to consider if a mental calculation would be appropriate before using written methods.**
- ✓ **Children should be encouraged to approximate their answers before calculating.**
- ✓ **Children should be encouraged to check their answers after calculation using an appropriate strategy.**

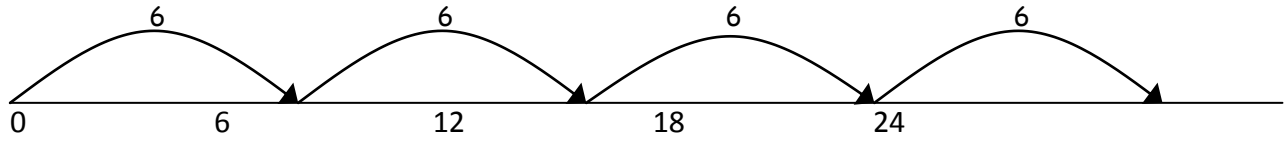
Key Vocabulary: share, share equally, one each, two each…, group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, **inverse, short division, _carry', remainder, multiple**

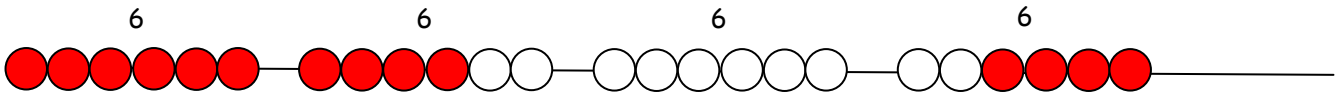
Key number skills needed for division at Y3:

- Recall and use multiplication and division facts for the 2, 3, 4, 5, 8 and 10 multiplication tables (through doubling, connect the 2, 4 and 8s).
- Divide whole numbers by 10 or 100 to give whole number answers
- Recognise that division is not commutative.
- Use place value and number facts in mental division. (E.g. 84 ÷ 4 is half of 42)
- Divide larger numbers mentally by subtracting the tenth multiple, including those with remainders. (E.g. 57 ÷ 3 is 10 + 9 as 10x3=30 and 9x3=27)
- Halve even numbers to 100, halve odd numbers to 20
- Solve problems, in contexts, and including missing number problems, involving multiplication and division.
- Pupils develop efficient mental methods, for example, using multiplication and division facts (e.g. using 3 × 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (30 × 2 = 60, so 60 ÷ 3 = 20 and 20 = 60 ÷ 3).
- Perform divisions just above the 10^{th} multiple using the written layout and understanding how to give a remainder as a whole number.
- Find unit fractions of quantities and begin to find non-unit fractions of quantities

Divide 2-digit numbers by a single digit.

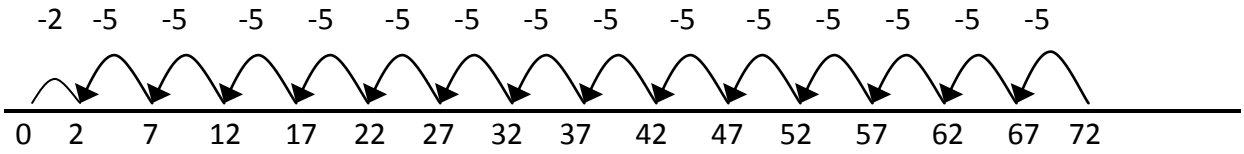
Children should continue to use number lines or bead bars to support their understanding.



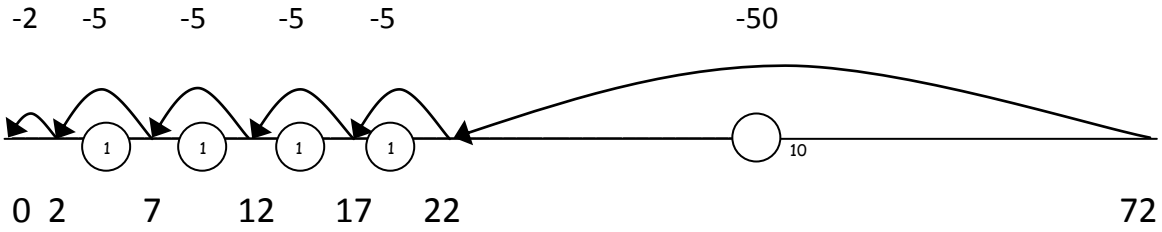


Grouping / repeated subtraction on a number line: STEP 1: Children continue to work out unknown division facts by grouping on a number line from zero. They are also now taught the concept of **remainders,** as in the example. This should be introduced practically and with arrays, as well as being translated to a number line. Children should work towards calculating some basic division facts with remainders mentally for the 2s, 3s, 4s, 5s, 8s and 10s, ready for remainders within vertical chunking methods.

72 ÷ 5



Moving on to



Step 2 - The above method of CHUNKING on a number line leads itself to its representation vertically (see Y4).

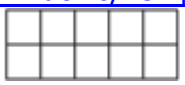
Mental - Informal recording in Year 3 for 84 ÷ 7 might be:

84

70 + 14 ÷ 7

10 + 2 = 12

In this example, using knowledge of multiples, the 84 is partitioned into 70 (the highest multiple of 7 that is also a multiple of 10 and less than 84) plus 14 and then each part is divided separately using the distributive law.

Children **understand the relationship between multiplication and division** . For example, they state two multiplication sentences and two division sentences that relate to a particular array, for example: /AppData/Local/Microsoft/Windows/Temporary Internet Files/Content.IE5/LFBK9QJQ/multiarray_05.exe  $5 \times 2=10$, $2 \times 5=10$ $10 \div 2=5$, $10 \div 5=2$

Children who are secure with division as grouping and demonstrate this using number lines, arrays etc. may be extended to **short division** (see Y4).

Year 4

Key Vocabulary: share, share equally, one each, two each…, group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, „carry", remainder, multiple, **divisible by, factor**

Key number skills needed for division at Y4:

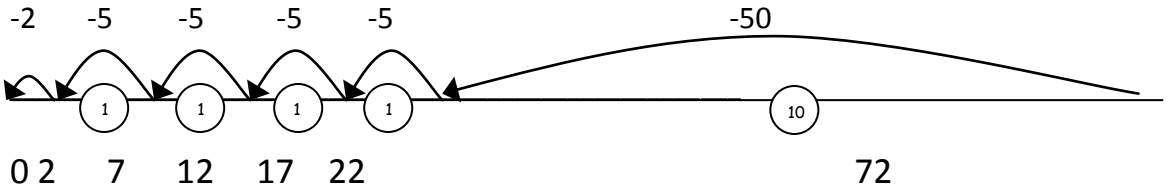
- Know by heart all the division facts up to 144 ÷ 12.
- Divide whole numbers by 10, 100 to give whole number answers or answers with one decimal place
- Divide multiples of 100 by 1-digit numbers using division facts. (E.g. 3200 ÷ 8 = 400)
- Use place value and number facts in mental division. (E.g. 245 ÷ 20 is double 245 ÷ 10)
- Divide larger numbers mentally by subtracting the 10^{th} or 20^{th} multiple as appropriate. (E.g. 156 ÷ 6 is 20 + 6 as 20x6=120 and 6x6=36)
- Find halves of even numbers to 200 and beyond using partitioning
- Begin to halve amounts of money. (E.g. Half of £52.40 = £26.20)

- Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as three cakes shared equally between 10 children.
- Pupils practise to become fluent in the formal written method of short division with exact answers when dividing by a one-digit number (2 or 3-digit by a single dogit)
- Give remainders as whole numbers.
- Begin to reduce fractions to their simplest forms.
- Find unit and non-unit fractions of larger amounts.

Divide up to 3-digit numbers by a 1- digit (without remainders initially)

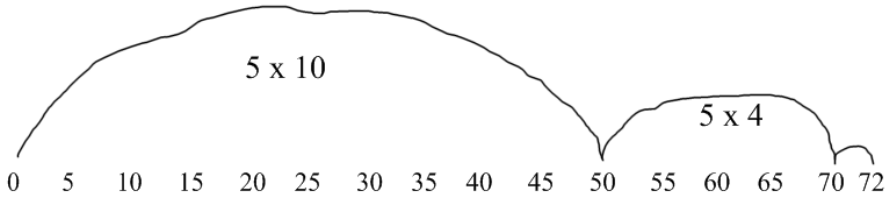
They will continue to develop their use of repeated subtraction to be able to subtract multiples of the divisor (chunking) (see Y3).

72 ÷ 5



or counting forward(linked to multiplication)

or

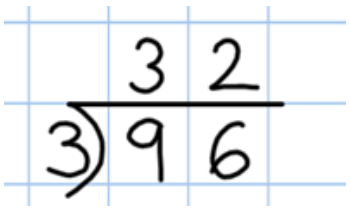


Step 2 - The above method of CHUNKING on a number line leads itself to its representation vertically. Once children are secure with division as grouping and demonstrate this using number lines, arrays etc. they can also represent this as an informal vertical method of recording.

		10	+	5	=	1	5
	5 ⟌	7	2				
		5	0				
		3	2				
		2	0				

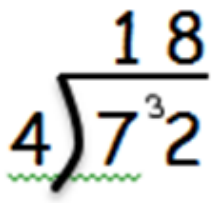
Include teaching in context using measure and money.

Formal written methods:



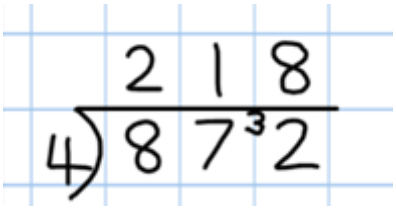
Once children are secure with division as grouping and demonstrate this using number lines, arrays etc., **short division** for larger 2-digit numbers should be introduced, initially with carefully selected examples requiring no calculating of remainders at all. Start by introducing the layout of short division by comparing it to an array. **Remind children of correct place value, that 96 is equal to 90 and 6, but in short division, pose:**

- How many 3‟s in 9? = 3, and record it above the **9 tens**.
- How many 3‟s in 6? = 2, and record it above the **6 units**



Limit numbers to **NO** remainders in the final answer, but with remainders occurring within the calculation

Once children demonstrate a full understanding of remainders, and also the short division method taught, they can be taught how to use the method when remainders occur within the calculation (e.g. 96†4), and be taught to „carry" the remainder onto the next digit. **If needed, children should use the number line to work out individual division facts that occur which they are not yet able to recall mentally.**



Pupils move onto dividing numbers with up to **3-digits** by a single digit, however problems and calculations provided should **not result in a final answer with remainder** at this stage**.** Children who exceed this expectation may progress to Y5 level