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?

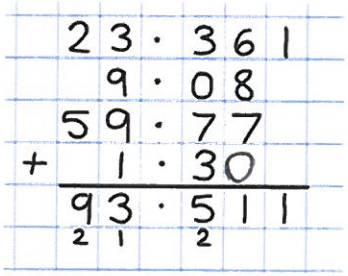
Addition

Year 6 Add several numbers of increasing complexity

Adding several numbers with different numbers of decimal places (including money and measures):

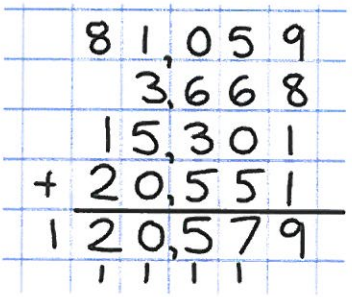
Key skills for addition at Y6:

In their head:



- Perform mental calculations, including with mixed operations and large numbers, using and practising a range of mental strategies.
- Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- Round any whole number to a required degree of accuracy.
- Pupils understand how to add mentally with larger numbers and calculations of increasing complexity.

On paper:



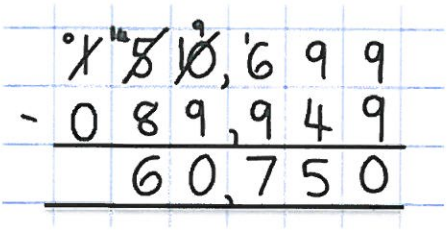
- Solve multi-step problems in context, deciding which operations and methods to use and why.
- Read, write, order and compare numbers up to 10 million and determine the value of each digit.

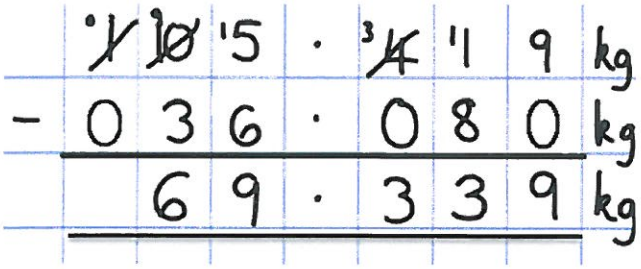
Key vocabulary: add, more, plus, and, make, altogether, total, equal to, equals, double, most, count on, number line, sum, tens, units, partition, plus, addition, column, tens boundary, hundreds boundary, increase, carry, expanded, compact, vertical, thousands, hundreds, digits, inverse, decimal places,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

Subtraction

Year 6 Subtracting with increasingly large and more complex numbers and decimal values.

Using the compact column method to subtract more complex integers





Using the compact column method to subtract money and measures, including decimals with different numbers of decimal places.

Pupils should be able to apply their knowledge of a range of mental strategies, mental recall skills, and informal and formal written methods when selecting the most appropriate method to work out subtraction problems.

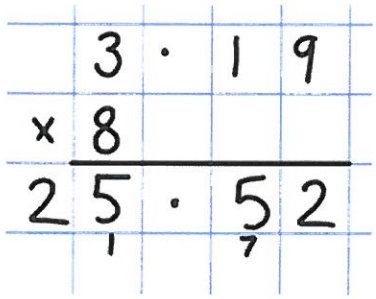
Key skills for subtraction at Y6:

- Solve addition and subtraction multi-step problems in context, deciding which operations and methods
- Read, write, order and compare numbers up to 10 million and determine the value of each digit
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero.
- Children need to utilise and consider a range of mental subtraction strategies, jottings and written methods before choosing how to calculate.

Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, distance between, how many more, how many fewer / less than, most, least, countback, how many left, how much less is_? difference, count on, strategy, partition, tens, units exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths, decimal

Multiplication

Year 6 Short and long multiplication as in Y5, and multiply decimals with up to 2 d.p. by a single digit.



Key skills for multiplication at Y6:

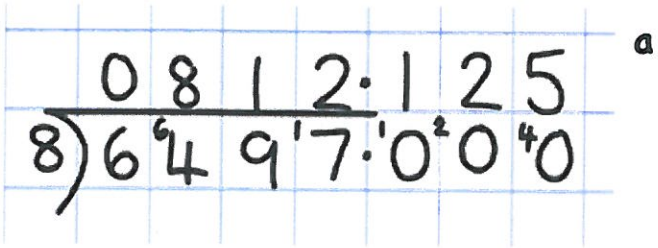
- Recall multiplication facts for all times tables up to 12 x 12 (as Y4 and Y5).
- Multiply multi-digit numbers, up to 4-digit x 2-digit using long multiplication.
- Perform mental calculations with mixed operations and large numbers.
- Solve multi-step problems in a range of contexts, choosing appropriate combinations of operations and methods.
- Estimate answers using round and approximation and determine levels of accuracy.
- Round any integer to a required degree of accuracy.

Key vocabulary: groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, array, column, row, commutative, sets of, equal groups, times as big as, once, twice, three times... partition, grid method, total, multiple, product, inverse, square, factor, integer, decimal, short / long multiplication, carry, tenths, hundredths, decimal

Division

Year 6 Divide at least 4 digits by both single-digit and 2-digit numbers (including decimal numbers and quantities)

Short division, for dividing by single digit e.g. 6497 ÷ 8



400 ÷ 30		
300	10	(10 x 30 = 300)
100		(10 pencils bought 100p left)
- 90	3	(3 x 30 = 90)
10		(3 more pencils - 10p left)
	13	(10 + 3 = 13 pencils bought)

(10p Remaining)

Introduce long division by chunking for dividing by 2 digits

Key skills for division at Y6:

- Recall and use multiplication and division facts for all numbers to 12 x 12 for more complex calculations
- Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as appropriate for the context.
- Perform mental calculations, including with mixed operations and large numbers.
- Identify common factors, common multiples and prime numbers.
- Solve problems involving all 4 operations.
- Use estimation to check answers to calculations and determine accuracy, in the context of a problem.
- Use written division methods in cases where the answer has up to two decimal places.
- Solve problems, which require answers to be rounded to specified degrees of accuracy.

Key vocabulary: As previously, & common factor