WELCOME TO YEAR 5

On the next few pages of your homework book, please find an outline of the four written methods which we will learn this year. If you need any further support or guidance, then please take a look at our class page on the website which holds links to the calculation policy and has videos modelling the methods. If you need any further support, then please do not hesitate to contact one of us.

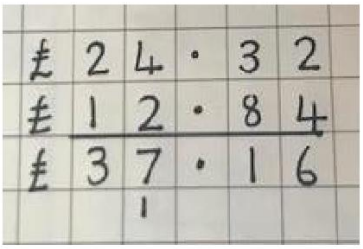
Mrs Higginson and Mrs Evans

ADDITION

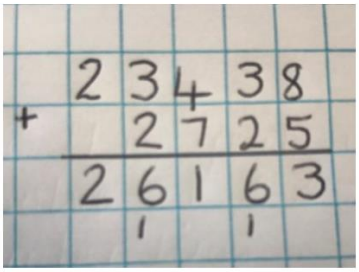
Year 5

National Curriculum Objectives: Addition objectives from Addition and Subtraction Strand	Key Skills/ other linked NC Objectives (Place Value)	Key Vocabulary
• Add whole numbers with more than 4 digits, including using formal written methods (columnar addition). • Add increasingly large numbers mentally. • Solve addition multi-step problems in contexts, deciding which operations and methods to use and why.	• Read, write and compare numbers to at least 1,000,000 and determine the value of each digit. • Count forwards in steps of powers of ten for any given number up to 1,000,000.	*All previously taught vocabulary, plus* Tenths, hundredths, thousandths, decimal places, decimal point

The decimal point should be aligned in the same way as their other place value columns and must be in the same column in the answer.

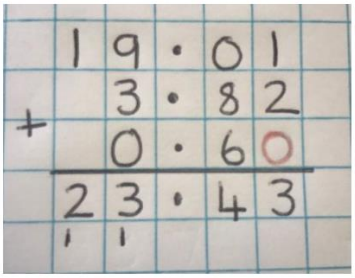


Numbers should exceed 4 digits.



Pupils should be able to add more than two values, carefully aligning place value columns.

Children should understand the place value of tenths and hundredths and use this to align numbers with different numbers of decimal places.



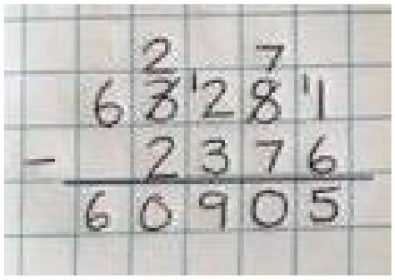
SUBTRACTION

Year 5

National Curriculum Objectives: Subtraction objectives from Addition and Subtraction Strand	Key Skills/ other linked NC Objectives (Place Value)	Key Vocabulary
• Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction). • Subtract increasingly large numbers mentally. • Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	• Read, write and compare numbers to at least 1,000,000 and determine the value of each digit. • Count backwards in steps of powers of ten for any given number up to 1,000,000.	*All previously taught vocabulary, plus* Tenths, hundredths, decimal, decimal point

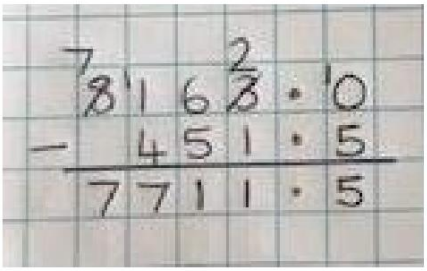
Children use this method to subtract increasingly large and complex numbers, in a range of contexts.

Those children who are not ready for this, should become confident with the expanded column method first.

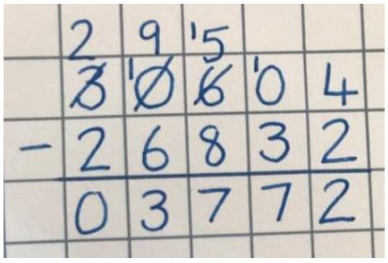


Children should be taught to use this method to subtract decimals, including mixtures of whole numbers and decimals, ensuring they align the decimal point correctly.

Children should be taught to add a zero in any empty decimal places to aid understanding of what to subtract in that column.



Ensure children have experience of using this method for subtraction where there is a 0 in the column they need to exchange from, and that they understand, through clear modelling (using practical resources) how to move to the next column and exchange then 'move' the value along.



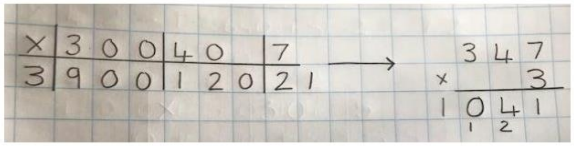
MULTIPLICATION

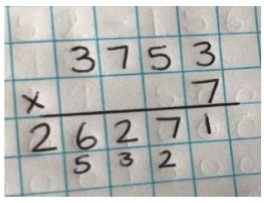
Year 5

National Curriculum Objectives: Multiplication objectives from Multiplication and Division Strand	Key Skills/ other linked NC Objectives (Place Value)	Key Vocabulary
• Multiply numbers up to 4 digits by a one-digit or two-digit number including long multiplication for multiplying by two-digit numbers. • Identify multiples and factors • Multiply mentally, drawing upon known facts. • Multiply whole numbers and those involving decimals by 10, 100 and 1,000. • Recognise and use square and cube numbers. • Solve problems using the 4 operations, and a combination of these, including understanding the meaning of the equals sign. • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	• Count forwards in steps of powers of 10 for any given number up to 1,000,000.	*All previous vocabulary, plus:* Square number, cube number integer, short multiplication, long multiplication

Step 1: Short multiplication for multiplying by a one-digit number

Children use this method to multiply four-digit numbers by a one-digit number, in a range of contexts and units.



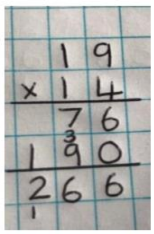


Step 2: Introduce long multiplication for multiplying by two-digits.

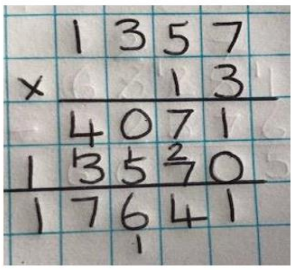
The grid method can be used to introduce long multiplication as this method not only shows each row clearly but will be a familiar method to the children.

Children when multiplying by the tens number, children should be taught to put the '0' in the ones column then think '1 times 8, 1 times 1' etc., as long as they understand the place value involved.

x	10	9
10	100	90
4	40	36



x	1000	300	50	7
10	10000	3000	500	70
3	3000	900	150	21



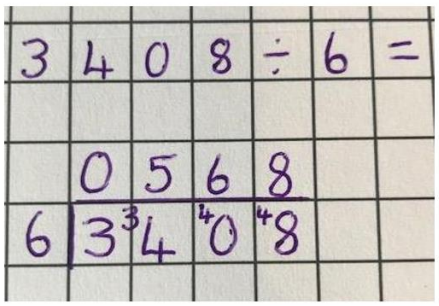
DIVISION

Year 5

National Curriculum Objectives: Division objectives from Multiplication and Division Strand	Key Skills/ other linked NC Objectives	Key Vocabulary
• Divide numbers mentally, drawing upon known facts. • Divide numbers up to 4 digits by a one-digit number using short division and interpret remainders appropriately for the context. • Divide whole number and those involving decimals by 10, 100 and 1,000. • Solve problems using division and a combination of the four operations.	• Identifying all factor pairs of a number and common factors of 2 numbers. • Know and use vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • Establish whether a number up to 100 is prime and recall prime numbers up to 19.	*Previous vocabulary, plus:* Quotient, prime number, prime factors, common factor, composite (non-prime) number

Step 1: Short division with no remainder in the final answer.

Children should recap their previous work on short division- at this stage with no final remainder, but with remainders which need carrying within the calculation. This will now be extended to include four-digit numbers divided by a one-digit number.



Step 2: Short division with remainders.

Children are introduced to examples that have remainders within the final answer. Children should be given the opportunity, through specific teaching and modelling, to consider the meaning of the remainder and how it should be expressed (i.e. as a fraction, a decimal, or as a rounded number, depending on the context of the problem).