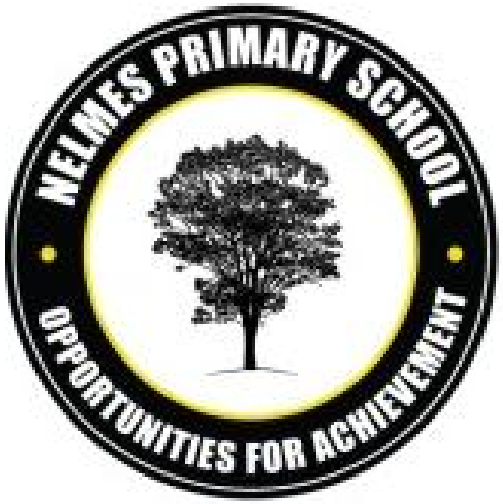
Nelmes Primary School

Mental Calculations Policy.



Mental Strategies.

The purpose of this policy is to outline the progression of mental skills that are taught in order to ensure that all children at Nelmes Primary achieve their maximum potential. We aim to establish a secure understanding of mental calculation strategies appropriate to each child's age and stage of mathematical development.

Mental maths is taught daily, during the mental oral warm up. This involves practice in the quick recall of key number facts, the solving of problems and discussion of effective strategies for carrying out mental calculations.

It is essential that rapid recall of key number facts is embedded prior to written calculations begin taught. All mental calculation strategies are based on a secure understanding of place value.

Reception.

- Count reliably 0-10, then 0-20
- Ordering numbers 1-5, then 1-10, then 1-15, then 1-20
- Meaning of more (+) and less(-)
- Understand quantity and what it looks like
- Understand the vocabulary of + and –
- Add and subtract single digit number e.g. number bonds to 10 and within 10
- Counting in 2s (more able count in 5s and 10s)
- Doubling up to 10 (more able might be able to double multiplies of 10)
- Basic halving, practically using objects.
- Oral problem solving
- Understand, follow and write number sentences.

Year 1

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count in multiples of 2s, 5s and 10s
- Find 1 more and 1 less from a given number
- Recall the number bonds and relates subtraction facts within 20
- + and – one-digit and two-digit numbers to 20, including 0.
- Recall doubles to 20 and the related halves.
- Read and write numbers to 20
- Recognise odd and even numbers to 20

Year 2

- Count in steps of 2,3,5 and 10 from any number up to and beyond 100
- Read and write numbers to at least 100
- Partition numbers into T U and then HTU
- Quickly recall addition and subtraction facts within 20
- To use related facts to 100 e.g. 2 + 8 = 10 so 20 + 80 = 100
- Recall multiplication and related division facts for the 2, 5 and 10 times tables up to x12
- Quickly recall doubles to 20 and related halves
- Doubles and halves to 50
- Use place value to solve problems and number facts.
- Recognise odd and even numbers up to 100
- Round numbers to the nearest 10
- Find 10 more or 10 less

Year 3

- Quickly recall addition and subtraction facts within 20
- + and – multiples of 10
- Add and subtract pairs of two digit numbers
- know doubles of multiples of 5 and 10 to 100
- Recall multiplication and related division facts for the 2, 3, 4, 5, 8 and 10 times tables up to x 12
- Begin to multiply and divide and given number by 10 and 100
- + and – HTU and U, HTU and TU and HTU and HTU
- Partition numbers into H T U
- Compare and order numbers up to 1000
- Round numbers to the nearest whole number, multiple of 10 and 100
- Find half and doubles of numbers to 100
- Count in steps of 4, 8, 50 and 100
- Find 100 more or 100 less
- Read and write numbers to 1000

Year 4

- Multiply and divide and given number by 10, 100 and 1000
- Count in multiples of 6, 7, 9, 25 and 1000
- Find 1000 more or 1000 less than a given number
- Count backwards through zero to include negative numbers
- Recognise place value in a four digit number
- Round any number to the nearest 10, 100 or 1000
- Multiply and divide by 10, 100 and 1000
- Quickly recall bonds to 20, 100 and 1000
- Recall multiplication and division facts for tables up to 12 x 12
- Know square numbers
- Use place value, know and derived facts to multiply and divide mentally including@ x by 0 abnd 1; dividing by 1; multiplying 3 numbers together.

Year 5

- Recall multiplication and division facts for tables up to 12 x 12
- Round any number to the nearest 10, 100 or 1000
- Round to 1 decimal place
- Quickly recall bonds to 20, 100 and 1000 and from 1 decimal place
- Multiply and divide by 10, 100 and 1000 whole numbers
- Multiply and divide by 10, 100 and 1000 decimal numbers
- Recall prime numbers up to 19
- Read, write, order and compare numbers to at least 1,000,000 and to know the value of each digit
- Know place value of HTU.t and be able to partition the number
- Count on and back in 10s and 100s to 1,000,000
- Count backwards through zero to include negative numbers, 1 decimal place
- Read numbers to the nearest 10, 100, 1000, 10,000 and 100,000
- Know square and cubed numbers

Year 6

- Round whole and decimal numbers up to 3dp
- Recall square numbers and square roots
- Recall cubed and cubed roots
- Read, write, order and compare numbers to at least 10,000,000 and to know the value of each digit
- Multiply and divide by 10, 100 and 1000 whole numbers
- Multiply and divide by 10, 100 and 1000 decimal numbers
- Know prime numbers up to 100
- Know common factors to 100
- Know common multiples
- Know common equivalents for fractions, decimals and percentages
- Recall multiplication and division facts for tables up to 12 x 12
- Order numbers including fractions and decimals
- Add and subtract negative numbers
- Convert measures
- Calculate fractions and percentages of quantities.