

### CALCULATIONS (+, -, x and ÷)

- ❖ add and subtract whole numbers with more than 4 digits, including using formal written methods (column addition and subtraction)
- ❖ add and subtract numbers mentally with increasingly large numbers
- ❖ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- ❖ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- ❖ identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- ❖ know and use the 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
- ❖ multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- ❖ multiply and divide numbers mentally drawing upon known facts
- ❖ divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- ❖ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- ❖ recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ )
- ❖ solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- ❖ solve problems involving addition, subtraction, multiplication and division 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.

### FRACTIONS

- ❖ recognise and show, using diagrams common equivalent fractions
- ❖ count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- ❖ solve problems involving increasingly harder fractions to calculate quantities
- ❖ add and subtract fractions with the same denominator
- ❖ recognise and write decimal equivalents of any number of tenths or hundredths
- ❖ recognise and write decimal equivalents to  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$
- ❖ find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- ❖ round decimals with one decimal place to the nearest whole number
- ❖ compare numbers with the same number of decimal places up to two decimal places
- ❖ solve simple measure and money problems involving fractions and decimals to two decimal places.

### CALCULATIONS (+, -, x and ÷)

- ❖ multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- ❖ divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- ❖ divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- ❖ perform mental calculations, including with mixed operations and large numbers
- ❖ identify common factors, common multiples and prime numbers
- ❖ use knowledge of the order of operations to carry out calculations involving the four operations
- ❖ solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why
- ❖ use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

### NUMBER

- ❖ read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- ❖ count forwards or backwards in steps of powers of 10 for any given number up to 1000000
- ❖ interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- ❖ round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- ❖ solve number problems and practical problems that involve all of the above
- ❖ read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

## YEAR 5

### FRACTIONS

- ❖ compare and order fractions whose denominators are all multiples of the same number
- ❖ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- ❖ recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number [for example  $\frac{3}{5} + \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$ ]
- ❖ add and subtract fractions with the same denominator and denominators that are multiples of the same number
- ❖ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- ❖ read and write decimal numbers as fractions [for example,  $0.71 = \frac{71}{100}$ ]
- ❖ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- ❖ round decimals with two decimal places to the nearest whole number and to one decimal place
- ❖ read, write, order and compare numbers with up to three decimal places
- ❖ solve problems involving number up to three decimal places
- ❖ recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- ❖ solve problems which require knowing percentage and decimal equivalents of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$ ,  $\frac{1}{5}$ ,  $\frac{2}{5}$  and those fractions with a denominator of a multiple of 10 or 25.

## YEAR 6

### NUMBER

- ❖ read, write, order and compare numbers up to 10 000 000 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
- ❖ solve number and practical problems that involve all of the above.

Upper Key  
Stage 2 Maths

Number