National Curriculum Overview- Mathematics

Year 5

Reading

- apply their growing knowledge of root words, prefixes and suffixes, both to read aloud and to understand the meaning of new words that they meet
- continuing to read and discuss an increasingly wide range of fiction, poetry, plays, non-fiction and reference books or textbooks
- reading books that are structured in different ways and reading for a range of purposes
- increasing their familiarity with a wide range of books
- recommending books that they have read to their peers, giving reasons for their choices
- identifying and discussing themes and conventions in and across a wide range of writing
- making comparisons within and across books
- learning a wider range of poetry by heart
- preparing poems and plays to read aloud and to perform
- checking that the book makes sense to them, discussing their understanding and exploring the meaning of words in context
- asking questions to improve their understanding
- drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence
- predicting what might happen from details stated and implied
- summarising the main ideas drawn from more than one paragraph, identifying key details that support the main ideas
- identifying how language, structure and presentation contribute to meaning
- discuss and evaluate how authors use language, considering the impact on the reader
- distinguish between statements of fact and opinion
- retrieve, record and present information from non-fiction
- participate in discussions about books that are read to them and those they can read for themselves
- explain and discuss their understanding of what they have read, including through formal presentations and debates
- provide reasoned justifications for their views

Writing

- use further prefixes and suffixes and understand the guidance for adding them
- spell some words with 'silent' letters
- continue to distinguish between homophones and other words which are often confused
- use the first three or four letters of a word to check spelling, meaning or both of these in a dictionary use a thesaurus

- write legibly, fluently and with increasing speed, by choosing which shape of a letter to use when given choices and deciding whether or not to join specific letters

- plan their writing by:
- identifying the audience for and purpose of the writing, selecting the appropriate form and using other similar writing as models for their own
- noting and developing initial ideas, drawing on reading and research
- in writing narratives, considering how authors have developed characters and settings
- draft and write by:
- selecting appropriate grammar and vocabulary, understanding how such choices can change and enhance meaning
- in narratives, describing settings, characters and atmosphere and integrating dialogue to convey character and advance the action

- précising longer passages - using a wide range of devices to build cohesion within and across paragraphs - using further organisational and presentational devices to structure text and to guide the reader [for example, headings, bullet points, underlining]

• evaluate and edit by:
- assessing the effectiveness of their own and others' writing
- proposing changes to vocabulary, grammar and punctuation to enhance effects and clarify meaning
- ensuring the consistent and correct use of tense throughout a piece of writing
- ensuring correct subject and verb agreement when using singular and plural, distinguishing between the language of speech and writing - proof-read for spelling and punctuation errors

• perform their own compositions, using appropriate intonation, volume, and movement so that meaning is clear

• recognise vocabulary and structures that are appropriate for formal speech and writing

• use passive verbs to affect the presentation of information in a sentence

• use the perfect form of verbs to mark relationships of time and cause

• use expanded noun phrases to convey complicated information concisely

• use modal verbs or adverbs to indicate degrees of possibility

• use relative clauses beginning with who, which, where, when, whose, that or with an implied relative pronoun

• use commas to clarify meaning or avoid ambiguity in writing

• use hyphens to avoid ambiguity

• use brackets, dashes or commas to indicate parenthesis

• use semi-colons, colons or dashes to mark boundaries between independent clauses

• use a colon to introduce a list

• punctuate bullet points consistently

• use and understand the grammatical terminology in English Appendix 2 accurately and appropriately

Mathematics

• 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 1 000 000

• 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.

• 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 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 multiplication and division, including scaling by simple fractions and problems involving simple rates

- 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 greater than 1 as a mixed number
- 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
- 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, and as a decimal
- solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ $\frac{1}{4}$ 1/5 2/5 4/5 and those fractions with a denominator of a multiple of 10 or 25

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units
- measure and calculate the perimeter of rectangular shapes in centimetres and metres
- calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
- estimate volume and capacity
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (º)
- identify: - angles at a point and one whole turn (total 360º) - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180º) - other multiples of 90º • use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- identify, describe and represent the position of a shape following a reflection or translation

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables