CURRICULUM OVERVIEW YEAR 5

Numeracy
Year 5

It is important that learners become confident users of calculators. They need to recognise that the calculator is a tool of which they are in control and to understand how it can help them to develop their mathematics.

Learners can be taught how to use a calculator effectively and to recognise how and when it is appropriate to do so; by first deciding if mental and pencil-and-paper methods are quicker or more reliable. Note that to use a calculator effectively requires a secure knowledge of number, which has to be the prime aim.

N Number

Nn Numbers and the number system
•• **5Nn1** Count on and back in steps of constant size, extending beyond zero
•• **5Nn2** Know what each digit represents in five- and six-digit numbers
•• **5Nn3** Partition any number up to one million into thousands, hundreds, tens and units
•• **5Nn4** Use decimal notation for tenths and hundredths and understand what each digit represents
•• **5Nn5** Multiply and divide any number from 1 to 10 000 by 10 or 100 and understand the effect
•• **5Nn6** Round four-digit numbers to the nearest 10, 100 or 1000
•• **5Nn7** Round a number with one or two decimal places to the nearest whole number
•• **5Nn8** Order and compare numbers up to a million using the > and < signs
•• **5Nn9** Order and compare negative and positive numbers on a number line and temperature scale
•• **5Nn10** Calculate a rise or fall in temperature
•• **5Nn11** Order numbers with one or two decimal places and compare using the > and < signs
•• **5Nn12** Recognise and extend number sequences
•• **5Nn13** Recognise odd and even numbers and multiples of 5, 10, 25, 50 and 100 up to 1000
•• **5Nn14** Make general statements about sums, differences and multiples of odd and even numbers
•• **5Nn15** Recognise equivalence between equivalent fractions
•• **5Nn16** Recognise equivalence between the decimal and fraction forms of halves, tenths and hundredths and use this to help order fractions, e.g. 0.6 is more than 50% and less than 7/10
•• **5Nn17** Change an improper fraction to a mixed number, e.g. 47 to 1 43 ; order mixed numbers and place between whole numbers on a number line
•• **5Nn18** Relate finding fractions to division and use to find simple fractions of quantities
•• **5Nn19** Understand percentage as the number of parts in every 100 and find simple percentages.
•• **5Nn20** Express halves, tenths and hundredths as percentages
•• **5Nn21** Use fractions to describe and estimate a simple proportion, e.g. 51 of the beads are yellow
•• **5Nn22** Use ratio to solve problems, e.g. to adapt a recipe for 6 people to one for 3 or 12 people

Nc Calculation
Mental strategies
•• **5Nc1** Know by heart pairs of one-place decimals with a total of 1, e.g. 0.8 + 0.2
•• **5Nc2** Derive quickly pairs of decimals with a total of 10, and with a total of 1
•• **5Nc3** Know multiplication and division facts for the 2× to 10× tables
•• **5Nc4** Know and apply tests of divisibility by 2, 5, 10 and 100
•• **5Nc5** Recognise multiples of 6, 7, 8 and 9 up to the 10th multiple
•• **5Nc6** Know squares of all numbers to 10 × 10
•• **5Nc7** Find factors of two-digit numbers
•• **5Nc8** Count on or back in thousands, hundreds, tens and ones to add or subtract
•• **5Nc9** Add or subtract near multiples of 10 or 100, e.g. 4387 − 299
•• **5Nc10** Use appropriate strategies to add or subtract pairs of two- and three-digit numbers and number with one decimal place, using jottings where necessary

•• **5Nc11** Calculate differences between near multiples of 1000, e.g. 5026 − 4998, or near multiples of 1, e.g. 3.2 − 2.6

•• **5Nc12** Multiply multiples of 10 to 90, and multiples of 100 to 900, by a single-digit number

•• **5Nc13** Multiply by 19 or 21 by multiplying by 20 and adjusting

•• **5Nc14** Multiply by 25 by multiplying by 100 and dividing by 4

•• **5Nc15** Use factors to multiply, e.g. multiply by 3, then double to multiply by 6

•• **5Nc16** Double any number up to 100 and halve even numbers to 200 and use this to double and halve numbers with one or two decimal places, e.g. double 3.4 and half of 8.6

•• **5Nc17** Double multiples of 10 to 1000 and multiples of 100 to 10 000, e.g. double 360 or double 3600, and derive the corresponding halves

Addition and subtraction

•• **5Nc18** Find the total of more than three two- or three-digit numbers using a written method

•• **5Nc19** Add or subtract any pair of three- and/or four-digit numbers, with the same number of decimal places, including amounts of money

Multiplication and division

•• **5Nc20** Multiply or divide three-digit numbers by single-digit numbers

•• **5Nc21** Multiply two-digit numbers by two-digit numbers

•• **5Nc22** Multiply two-digit numbers with one decimal place by single-digit numbers, e.g. 3.6×7

•• **5Nc23** Divide three-digit numbers by single-digit numbers, including those with a remainder (answers no greater than 30)

•• **5Nc24** Start expressing remainders as a fraction of the divisor when dividing two-digit numbers by single-digit numbers

•• **5Nc25** Decide whether to group (using multiplication facts and multiples of the divisor) or to share (halving and quartering) to solve divisions

•• **5Nc26** Decide whether to round an answer up or down after division, depending on the context

•• **5Nc27** Begin to use brackets to order operations and understand the relationship between the four operations and how the laws of arithmetic apply to multiplication

G Geometry

Gs Shapes and geometric reasoning

•• **5Gs1** Identify and describe properties of triangles and classify as isosceles, equilateral or scalene

•• **5Gs2** Recognise reflective and rotational symmetry in regular polygons

•• **5Gs3** Create patterns with two lines of symmetry, e.g. on a pegboard or squared paper

•• **5Gs4** Visualise 3D shapes from 2D drawings and nets, e.g. different nets of an open or closed cube

•• **5Gs5** Recognise perpendicular and parallel lines in 2D shapes, drawings and the environment

•• **5Gs6** Understand and use angle measure in degrees; measure angles to the nearest 5°; identify, describe and estimate the size of angles and classify them as acute, right or obtuse

•• **5Gs7** Calculate angles in a straight line

Gp Position and movement

•• **5Gp1** Read and plot co-ordinates in the first quadrant

•• **5Gp2** Predict where a polygon will be after reflection where the mirror line is parallel to one of the sides, including where the line is oblique

•• **5Gp3** Understand translation as movement along a straight line, identify where polygons will be after a translation and give instructions for translating shapes

G Measure

Gl Length, mass and capacity

5Gl1 • 5Ml1 Read, choose, use and record standard units to estimate and measure length, mass and capacity to a suitable degree of accuracy

5Gl2 • 5Ml2 Convert larger to smaller metric units (decimals to one place), e.g. change 2.6 kg to 2600 g

5Gl3 • 5Ml3 Order measurements in mixed units

5Gl4 • 5Ml4 Round measurements to the nearest whole unit

5Gl5 • 5Ml5 Interpret a reading that lies between two unnumbered divisions on a scale

5Gl6 • 5Ml6 Compare readings on different scales

5Gl7 • 5Ml7 Draw and measure lines to the nearest centimetre and millimetre

Gt Time

5Gt1 • 5Mt1 Recognise and use the units for time (seconds, minutes, hours, days, months and years)

5Gt2 • 5Mt2 Tell and compare the time using digital and analogue clocks using the 24-hour clock

5Gt3 • 5Mt3 Read timetables using the 24-hour clock

5Gt4 • 5Mt4 Calculate time intervals in seconds, minutes and hours using digital or analogue formats

5Gt5 • 5Mt5 Use a calendar to calculate time intervals in days and weeks (using knowledge of days in calendar months)

5Gt6 • 5Mt6 Calculate time intervals in months or years

Ga Area and perimeter

5Ga1 • 5Ma1 Measure and calculate the perimeter of regular and irregular polygons

5Ga2 • 5Ma2 Understand area measured in square centimetres (cm2)

5Ga3 • 5Ma3 Use the formula for the area of a rectangle to calculate the rectangle's area

D Handling data

Dh Organising, categorising and representing data

•• **5Dh1** Answer a set of related questions by collecting, selecting and organising relevant data; draw conclusions from their own and others' data and identify further questions to ask

•• **5Dh2** Draw and interpret frequency tables, pictograms and bar line charts, with the vertical axis labelled for example in twos, fives, tens, twenties or hundreds. Consider the effect of changing the scale on the vertical axis

•• **5Dh3** Construct simple line graphs, e.g. to show changes in temperature over time

•• **5Dh4** Understand where intermediate points have and do not have meaning, e.g. comparing a line graph of temperature against time with a graph of class attendance for each day of the week

•• **5Dh5** Find and interpret the mode of a set of data

Db Probability

•• **5Db1** Describe the occurrence of familiar events using the language of chance or likelihood

Problem solving

Using techniques and skills in solving mathematical problems

•• **5Pt1** Understand everyday systems of measurement in length, weight, capacity, temperature and time and use these to perform simple calculations

•• **5Pt2** Solve single and multi-step word problems (all four operations); represent them, e.g. with diagrams or a number line

•• **5Pt3** Check with a different order when adding several numbers or by using the inverse when adding or subtracting a pair of numbers

•• **5Pt4** Use multiplication to check the result of a division, e.g. multiply 3.7×8 to check $29.6 \div 8$

•• **5Pt5** Recognise the relationships between different 2D and 3D shapes, e.g. a face of a cube is a square

•• **5Pt6** Estimate and approximate when calculating, e.g. using rounding, and check working

•• **5Pt7** Consider whether an answer is reasonable in the context of a problem

Using understanding and strategies in solving problems

•• **5Ps1** Understand everyday systems of measurement in length, weight, capacity, temperature and time and use these to perform simple calculations

•• **5Ps2** Choose an appropriate strategy for a calculation and explain how they worked out the answer

•• **5Ps3** Explore and solve number problems and puzzles, e.g. logic problems

•• **5Ps4** Deduce new information from existing information to solve problems

•• **5Ps5** Use ordered lists and tables to help to solve problems systematically

•• **5Ps6** Describe and continue number sequences, e.g. $-30, -27, \cdot, \cdot, -18...$; identify the relationships between numbers

•• **5Ps7** Identify simple relationships between shapes, e.g. these triangles are all isosceles because

•• **5Ps8** Investigate a simple general statement by finding examples which do or do not satisfy it, e.g. the sum of three consecutive whole numbers is always a multiple of three

•• **5Ps9** Explain methods and justify reasoning orally and in writing; make hypotheses and test them out

•• **5Ps10** Solve a larger problem by breaking it down into sub-problems or represent it using diagrams

Literacy

The following genres and text types are recommended at Stage 5:
Fiction and poetry: novels and longer stories, fables, myths and legends, stories from other cultures, older literature including traditional tales, poetry, plays including film narrative and dramatic conventions.
Non-fiction: non-chronological reports, explanations, recounts (including biography), persuasive texts.

Reading

Develop broad reading skills*
•• **5Ro1** Skim read to gain an overall sense of a text and scan for specific information
•• **5Ro2** Compare and evaluate the print and film versions of a novel or play
•• **5Ro3** Compare dialogue and dramatic conventions in film narrative
•• **5Ro4** Read and perform narrative poems
•• **5Ro5** Read poems by significant poets and compare style, forms and themes
•• **5Ro6** Investigate the origin and appropriate use of idiomatic phrases

Demonstrate understanding of explicit meaning in texts
•• **5Rx1** Look for information in non-fiction texts to build on what is already known
•• **5Rx2** Extract key points and group and link ideas
•• **5Rx3** Locate information confidently and efficiently from different sources

Demonstrate understanding of implicit meaning in texts
•• **5Ri1** Provide accurate textual reference from more than one point in a story to support answers
•• **5Ri2** Identify the point of view from which a story is told

Explain, comment on and analyse the way writers use stylistic and other features of language and structure in texts
•• **5Rw1** Comment on a writer's use of language and explain reasons for the writer's choices
•• **5Rw2** Begin to interpret imagery and techniques, e.g. metaphor, personification, simile, adding to understanding beyond the literal
•• **5Rw3** Discuss metaphorical expressions and figures of speech
•• **5Rw4** Understand clauses within sentences and how they are connected
•• **5Rw5** Compare the structure of different stories
•• **5Rw6** Understand the difference between direct and reported speech
•• **5Rw7** Learn how dialogue is set out and punctuated
•• **5Rw8** Identify unfamiliar words, explore definitions and use new words in context
•• **5Rw9** Understand the use of impersonal style in explanatory texts
•• **5Rw10** Understand conventions of standard English, e.g. agreement of verbs
* Broad reading skills are not assessed in the tests.

Recognise conventions and evaluate viewpoint, purpose, themes and ideas in texts
•• **5Rv1** Read and evaluate non-fiction texts for purpose, style, clarity and organisation
•• **5Rv2** Explore the features of texts which are about events and experiences, e.g. diaries
•• **5Rv3** Compare writing that informs and persuades
•• **5Rv4** Note the use of persuasive devices, words and phrases in print and other media
•• **5Rv5** Read and identify characteristics of myths, legends and fables
•• **5Rv6** Read widely and explore the features of different fiction genres
•• **5Rv7** Consider how a writer expresses their own point of view, e.g. how characters are presented

Writing

Develop broad writing skills*

•• **5Wo1** Recognise a range of less common letter strings in words which may be pronounced differently

•• **5Wo2** Evaluate own and others' writing

•• **5Wo3** Use dictionaries efficiently and carry out IT spell checks

•• **5Wo4** Make notes for different purposes, using simple abbreviations and writing 'in your own words'

•• **5Wo5** Practise fast, fluent and legible handwriting styles for different purposes

Select and develop content and use register and language appropriate to genre, purpose and audience

•• **5Wa1** Use imagery and figurative language to evoke imaginative response

•• **5Wa2** Maintain a consistent viewpoint when writing

•• **5Wa3** Use a more specialised vocabulary to match the topic

•• **5Wa4** Choose words and phrases carefully to convey feeling and atmosphere

•• **5Wa5** Collect synonyms and opposites and investigate shades of meaning

•• **5Wa6** Use a thesaurus to extend vocabulary and choice of words

•• **5Wa7** Write non-chronological reports and explanations

•• **5Wa8** Write new scenes or characters into a story, or write from another viewpoint

•• **5Wa9** Draft and write letters for real purposes

•• **5Wa10** Write own versions of legends, myths and fables, using structures from reading

•• **5Wa11** Write a playscript, including production notes to guide performance

•• **5Wa12** Write a commentary on an issue, setting out and justifying a personal view

•• **5Wa13** Record ideas, reflections and predictions about books, e.g. in a reading log

•• **5Wa14** Practise proofreading and editing own writing for clarity and correctness

•• **5Wa15** Review, revise and edit writing in order to improve it, using IT as appropriate

Structure and organise ideas coherently using sections or paragraphs

•• **5Wt1** Map out writing to plan structure, e.g. paragraphs, sections, chapters

•• **5Wt2** Use pronouns, making clear to what or to whom they refer

•• **5Wt3** Begin to establish links between paragraphs using adverbials

* Broad writing skills are not assessed in the tests.

Use a range of sentence structures and punctuation to convey meaning and create effects

•• **5Wp1** Use an increasing range of subordinating connectives

•• **5Wp2** Combine simple sentences and re-order clauses to make compound and complex sentences

•• **5Wp3** Begin to use the comma to separate clauses within sentences and clarify meaning in complex sentences

•• **5Wp4** Begin to set out dialogue appropriately, using a range of punctuation

•• **5Wp5** Identify prepositions and use the term preposition

•• **5Wp6** Extend understanding of the use of adverbs to qualify verbs, e.g. in dialogue

•• **5Wp7** Use apostrophes for both possession and shortened forms

•• **5Wp8** Spell and make correct use of possessive pronouns, e.g. *their, theirs, my, mine*

Use accurate spelling

•• **5Ws1** Investigate the spelling of word-final unstressed vowels, e.g. the unstressed 'er' at the end of butter and unstressed 'ee' at the end of city

•• **5Ws2** Learn spelling rules for words ending in *-e* and *-y*, e.g. *take/taking, try/tries*

•• **5Ws3** Know rules for doubling consonants and investigate patterns in the use of single and double consonants, e.g. *-full/-ful*

•• **5Ws4** Use known spellings to work out the spelling of related words

•• **5Ws5** Use effective strategies for learning new spellings and misspelt words

•• **5Ws6** Identify 'silent' vowels in polysyllabic words, e.g. library, interest

•• **5Ws7** Investigate spelling patterns for pluralisation, e.g. *-s, -es, -y/-ies, -f/-ves*

•• **5Ws8** Extend earlier work on prefixes and suffixes, recognising that different spelling rules apply for suffixes which begin with vowels and those that begin with consonants

•• **5Ws9** Understand ways of creating opposites, e.g. *un-*, *im-* and comparatives, e.g. *-er*, *-est*

•• **5Ws10** Understand grammatical homophones, e.g. *they're*, *their*, *there*

•• **5Ws11** Identify word roots and derivations to support spelling and vocabulary, e.g. *sign*, *signal*, *signature*

Speaking and listening

•• **5SL1** Shape and organise ideas clearly when speaking to aid the listener

•• **5SL2** Prepare and present an argument to persuade others to adopt a point of view

•• **5SL3** Talk confidently in extended turns and listen purposefully in a range of contexts, responding to guidance
about, and feedback on, the quality of contributions

•• **5SL4** Begin to adapt non-verbal gestures and vocabulary to suit content and audience

•• **5SL5** Describe events and convey opinions with increasing clarity and detail

•• **5SL6** Recall and discuss important features of a talk, possibly contributing new ideas

•• **5SL7** Ask questions to develop ideas and extend understanding

•• **5SL8** Report back to a group, using notes to present findings about a topic studied. Evaluate what is heard and
give reasons for agreement or disagreement

•• **5SL9** Take different roles and responsibilities within a group

•• **5SL10** Convey ideas about characters in drama through deliberate choice of speech, gesture and movement

•• **5SL11** Begin to discuss how and why language choices vary in different situations

Science

E Scientific enquiry

Ep Ideas and evidence

•• **5Ep1** Know that scientists have combined evidence with creative thinking to suggest new ideas and explanations for phenomena

•• **5Ep2** Use observation and measurement to test predictions and make links

Ep Plan investigative work

•• **5Ep3** Make predictions of what will happen based on scientific knowledge and understanding, and suggest and communicate how to test these

•• **5Ep4** Use knowledge and understanding to plan how to carry out a fair test

•• **5Ep5** Collect sufficient evidence to test an idea

•• **5Ep6** Identify factors that need to be taken into account in different contexts

Eo Obtain and present evidence

•• **5Eo1** Make relevant observations

•• **5Eo2** Measure volume, temperature, time, length and force

•• **5Eo3** Discuss the need for repeated observations and measurements

•• **5Eo4** Present results in bar charts and line graphs

Eo Consider evidence and approach

•• **5Eo5** Decide whether results support predictions

•• **5Eo6** Begin to evaluate repeated results

•• **5Eo7** Recognise and make predictions from patterns in data and suggest explanations using scientific knowledge and understanding

•• **5Eo8** Interpret data and think about whether it is sufficient to draw conclusions

B Biology

Bp Plants

•• **5Bp1** Know that plants need energy from light for growth

•• **5Bp2** Know that plants reproduce

•• **5Bp3** Observe how seeds can be dispersed in a variety of ways

•• **5Bp4** Investigate how seeds need water and warmth for germination, but not light

•• **5Bp5** Know that insects pollinate some flowers

•• **5Bp6** Observe that plants produce flowers which have male and female organs; seeds are formed when pollen from the male organ fertilises the ovum (female)

•• **5Bp7** Recognise that flowering plants have a life cycle including pollination, fertilisation, seed production, seed dispersal and germination

C Chemistry

Cs States of matter

•• **5Cs1** Know that evaporation occurs when a liquid turns into a gas

•• **5Cs2** Know that condensation occurs when a gas turns into a liquid and that it is the reverse of evaporation

•• **5Cs3** Know that air contains water vapour and when this meets a cold surface it may condense

•• **5Cs4** Know that the boiling point of water is 100 °C and the melting point of ice is 0 °C

•• **5Cs5** Know that when a liquid evaporates from a solution the solid is left behind

P Physics

Pl Light

•• **5Pl1** Observe that shadows are formed when light travelling from a source is blocked

•• **5Pl2** Investigate how the size of a shadow is affected by the position of the object

•• **5Pl3** Observe that shadows change in length and position throughout the day

•• **5Pl4** Know that light intensity can be measured

•• **5Pl5** Explore how opaque materials do not let light through and transparent materials let a lot of light through

•• **5Pl6** Know that we see light sources because light from the source enters our eyes

•• **5Pl7** Know that beams/rays of light can be reflected by surfaces including mirrors, and when reflected light enters our eyes we see the object

•• **5Pl8** Explore why a beam of light changes direction when it is reflected from a surface

Pb The Earth and beyond

•• **5Pb1** Explore, through modeling, that the sun does not move; its *apparent* movement is caused by the Earth spinning on its axis

•• **5Pb2** Know that the Earth spins on its axis once in every 24 hours

•• **5Pb3** Know that the Earth takes a year to orbit the sun, spinning as it goes

•• **5Pb4** Research the lives and discoveries of scientists who explored the solar system and stars