# CURRICULUM OVERVIEW YEAR 6

**TRIDENT PREPARATORY**

KALUMBILA

# Numeracy

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**

•• **6Nn1** Count on and back in fractions and decimals, e.g. 31 s, 0.1s, and repeated steps of whole numbers (and through zero)

•• **6Nn2** Know what each digit represents in whole numbers up to a million

•• **6Nn3** Know what each digit represents in one- and two-place decimal numbers

•• **6Nn4** Multiply and divide any whole number from 1 to 10 000 by 10, 100 or 1000 and explain the effect

•• **6Nn5** Multiply and divide decimals by 10 or 100 (answers up to two decimal places for division)

•• **6Nn6** Find factors of two-digit numbers

•• **6Nn7** Find some common multiples, e.g. for 4 and 5

•• **6Nn8** Round whole numbers to the nearest 10, 100 or 1000

•• **6Nn9** Round a number with two decimal places to the nearest tenth or to the nearest whole number

•• **6Nn10** Make and justify estimates and approximations of large numbers

•• **6Nn11** Order and compare positive numbers to one million, and negative integers to an appropriate level

•• **6Nn12** Use the >, < and = signs correctly

•• **6Nn13** Estimate where four-digit numbers lie on an empty 0–10000 line

•• **6Nn14** Order numbers with up to two decimal places (including different numbers of places)

•• **6Nn15** Recognise and extend number sequences

•• **6Nn16** Recognise and use decimals with up to three places in the context of measurement

•• **6Nn17** Recognise odd and even numbers and multiples of 5, 10, 25, 50 and 100 up to 1000

•• **6Nn18** Make general statements about sums, differences and multiples of odd and even numbers

•• **6Nn19** Recognise prime numbers up to 20 and find all prime numbers less than 100

•• **6Nn20** Recognise the historical origins of our number system and begin to understand how it developed

•• **6Nn21** Compare fractions with the same denominator and related denominators, e.g. 43 with 87

•• **6Nn22** Recognise equivalence between fractions, e.g. between 100 1 s, 10 1 s and 2 1 s

•• **6Nn23** Recognise and use the equivalence between decimal and fraction forms

•• **6Nn24** Order mixed numbers and place between whole numbers on a number line

•• **6Nn25** Change an improper fraction to a mixed number, e.g. 817 to 2 81

•• **6Nn26** Reduce fractions to their simplest form, where this is 41 , 21 , 43 or a number of fifths or tenths

•• **6Nn27** Begin to convert a vulgar fraction to a decimal fraction using division

•• **6Nn28** Understand percentage as parts in every 100 and express 21 , 41 , 31 , 101 , 1001 as percentages

•• **6Nn29** Find simple percentages of shapes and whole numbers

•• **6Nn30** Solve simple problems involving ratio and direct proportion

**Nc Calculation**

*Mental strategies*

•• **6Nc1** Recall addition and subtraction facts for numbers to 20 and pairs of one-place decimals with a total of 1, e.g. 0.4 + 0.6

•• **6Nc2** Derive quickly pairs of one-place decimals totalling 10, e.g. 7.8 and 2.2, and two-place decimals totalling 1, e.g. 0.78 + 0.22

•• **6Nc3** Know and apply tests of divisibility by 2, 4, 5, 10, 25 and 100

•• **6Nc4** Use place value and number facts to add or subtract two-digit whole numbers and to add or subtract three-digit multiples of 10 and pairs of decimals, e.g. 560 + 270; 2.6 + 2.7; 0.78 + 0.23

•• **6Nc5** Add/subtract near multiples of one when adding numbers with one decimal place, e.g. 5.6 + 2.9; 13.5 – 2.1

•• **6Nc6** Add/subtract a near multiple of 10, 100 or 1000, or a near whole unit of money, and adjust, e.g. 3127 + 4998; 5678 – 1996

•• **6Nc7** Use place value and multiplication facts to multiply/divide mentally, e.g. 0.8 × 7; 4.8 ÷ 6

•• **6Nc8** Multiply pairs of multiples of 10, e.g. 30 × 40, or multiples of 10 and 100, e.g. 600 × 40

•• **6Nc9** Double quickly any two-digit number, e.g. 78, 7.8, 0.78 and derive the corresponding halves

•• **6Nc10** Divide two-digit numbers by single-digit numbers, including leaving a remainder

*Addition and subtraction*

•• **6Nc11** Add two- and three-digit numbers with the same or different numbers of digits/decimal places

•• **6Nc12** Add or subtract numbers with the same and different numbers of decimal places, including amounts of money

•• **6Nc13** Find the difference between a positive and negative integer, and between two negative integers in a context such as temperature or on a number line

*Multiplication and division*

•• **6Nc14** Multiply pairs of multiples of 10, e.g. 30 × 40, or multiples of 10 and 100, e.g. 600 × 40

•• **6Nc15** Multiply near multiples of 10 by multiplying by the multiple of 10 and adjusting

•• **6Nc16** Multiply by halving one number and doubling the other, e.g. calculate 35 × 16 with 70 × 8

•• **6Nc17** Use number facts to generate new multiplication facts, e.g. the 17× table from 10× + 7× tables

•• **6Nc18** Multiply two-, three- or four-digit numbers (including sums of money) by a single-digit number and two- or three-digit numbers by two-digit numbers

•• **6Nc19** Divide three-digit numbers by single-digit numbers, including those leaving a remainder and divide three-digit numbers by two-digit numbers (no remainder) including sums of money

•• **6Nc20** Give an answer to division as a mixed number, and a decimal (with divisors of 2, 4, 5, 10 or 100).

•• **6Nc21** Relate finding fractions to division and use them as operators to find fractions including several tenths and hundredths of quantities

•• **6Nc22** Know and apply the arithmetic laws as they apply to multiplication (without necessarily using the terms commutative, associative or distributive)


# G Geometry

**Gs Shapes and geometric reasoning**

•• **6Gs1** Classify different polygons and understand whether a 2D shape is a polygon or not

•• **6Gs2** Visualise and describe the properties of 3D shapes, e.g. faces, edges and vertices

•• **6Gs3** Identify and describe properties of quadrilaterals (including the parallelogram, rhombus and trapezium), and classify using parallel sides, equal sides, equal angles

•• **6Gs4** Recognise and make 2D representations of 3D shapes including nets

•• **6Gs5** Estimate, recognise and draw acute and obtuse angles and use a protractor to measure to the nearest degree

•• **6Gs6** Check that the sum of the angles in a triangle is 180°, for example, by measuring or paper folding; calculate angles in a triangle or around a point

**Gp Position and movement**

•• **6Gp1** Read and plot co-ordinates in all four quadrants

•• **6Gp2** Predict where a polygon will be after one reflection, where the sides of the shape are not parallel or perpendicular to the mirror line, after one translation or after a rotation through 90° about one of its vertices

# G Measure

**Gl Length, mass and capacity**

**6Gl1 • 6Ml1** Select and use standard units of measure. Read and write to two or three decimal places

**6Gl2 • 6Ml2** Convert between units of measurement (kg and g, *l* and m*l*, km, m, cm and mm), using decimals

to three places, e.g. recognising that 1.245 m is 1 m 24.5 cm

**6Gl3 • 6Ml3** Interpret readings on different scales, using a range of measuring instruments

**6Gl4 • 6Ml4** Draw and measure lines to the nearest centimetre and millimetre

**6Gl5 • 6Ml5** Know imperial units still in common use, e.g. the mile, and approximate metric equivalents

**Gt Time**

**6Gt1 • 6Mt1** Recognise and understand the units for measuring time (seconds, minutes, hours, days, weeks,

months, years, decades and centuries); convert one unit of time into another

**6Gt2 • 6Mt2** Tell the time using digital and analogue clocks using the 24-hour clock

**6Gt3 • 6Mt3** Compare times on digital and analogue clocks, e.g. realise quarter to four is later than 3:40

**6Gt4 • 6Mt4** Read and use timetables using the 24-hour clock

**6Gt5 • 6Mt5** Calculate time intervals using digital and analogue times

**6Gt6 • 6Mt6** Use a calendar to calculate time intervals in days, weeks or months

**6Gt7 • 6Mt7** Calculate time intervals in days, months or years

**6Gt8 • 6Mt8** Appreciate how the time is different in different time zones around the world

**Ga Area and perimeter**

**6Ga1 • 6Ma1** Measure and calculate the perimeter and area of rectilinear shapes

**6Ga2 • 6Ma2** Estimate the area of an irregular shape by counting squares

**6Ga3 • 6Ma3** Calculate perimeter and area of simple compound shapes that can be split into rectangles


# D Handling data

**Dh Organising, categorising and representing data**

•• **6Dh1** Solve a problem by representing, extracting and interpreting data in tables, graphs, charts and diagrams, e.g. line graphs for distance and time; a price 'ready-reckoner' for currency conversion; frequency tables and bar charts with grouped discrete data

•• **6Dh2** Find the mode and range of a set of data from relevant situations, e.g. scientific experiments

•• **6Dh3** Begin to find the median and mean of a set of data

•• **6Dh4** Explore how statistics are used in everyday life

**Db Probability**

•• **6Db1** Use the language associated with probability to discuss events, to assess likelihood and risk, including those with equally likely outcomes


# Problem solving

**Using techniques and skills in solving mathematical problems**

•• **6Pt1** Choose appropriate and efficient mental or written strategies to carry out a calculation involving addition, subtraction, multiplication or division

•• **6Pt2** Understand everyday systems of measurement in length, weight, capacity, temperature and time and use these to perform simple calculations

•• **6Pt3** Check addition with a different order when adding a long list of numbers; check when subtracting byusing the inverse

•• **6Pt4** Recognise 2D and 3D shapes and their relationships, e.g. a cuboid has a rectangular cross-section

•• **6Pt5** Estimate and approximate when calculating, e.g. use rounding, and check working

**Using understanding and strategies in solving problems**

•• **6Ps1** Explain why they chose a particular method to perform a calculation and show working

•• **6Ps2** Deduce new information from existing information and realise the effect that one piece of information
has on another

•• **6Ps3** Use logical reasoning to explore and solve number problems and mathematical puzzles

•• **6Ps4** Use ordered lists or tables to help solve problems systematically

•• **6Ps5** Identify relationships between numbers and make generalised statements using words, then symbols and letters, e.g. the second number is twice the first number plus 5 ($n$, $2n + 5$); all the numbers are multiples of
3 minus 1 ($3n - 1$); the sum of angles in a triangle is 180°

•• **6Ps6** Make sense of and solve word problems, single and multi-step (all four operations), and represent them, e.g. with diagrams or on a number line; use brackets to show the series of calculations necessary

•• **6Ps7** Solve simple word problems involving ratio and direct proportion

•• **6Ps8** Solve simple word problems involving percentages, e.g. find discounted prices

•• **6Ps9** Make, test and refine hypotheses, explain and justify methods, reasoning, strategies, results or conclusions orally

# Literacy

The following genres and text types are recommended at Stage 6:

Fiction: various genres including science fiction, extended narratives, stories with flashbacks, poetry including
imagery, plays.

Non-fiction: a range of forms and impersonal writing including recounts (biography, autobiography, diaries), non-chronological reports (journalistic writing), explanations, arguments, discussions.

## Reading

**Develop broad reading skills***

•• **6Ro1** Articulate personal responses to reading, with close reference to the text

•• **6Ro2** Understand different word classes

•• **6Ro3** Develop familiarity with the work of established authors and poets, identifying features which are common to more than one text

**Demonstrate understanding of explicit meaning in texts**

•• **6Rx1** Distinguish between fact and opinion in a range of texts and other media

•• **6Rx2** Paraphrase explicit meanings based on information from more than one point in the text

**Demonstrate understanding of implicit meaning in texts**

•• **6Ri1** Consider how the author manipulates the reaction of the reader, e.g. how characters and settings are presented

•• **6Ri2** Look for implicit meanings, and make plausible inferences from more than one point in the text

**Explain, comment on and analyse the way writers use stylistic and other features of language and structure in texts**

•• **6Rw1** Comment on a writer's use of language, demonstrating awareness of its impact on the reader

•• **6Rw2** Explore proverbs, sayings and figurative expressions

•• **6Rw3** Analyse the success of writing in evoking particular moods, e.g. suspense

•• **6Rw4** Begin to show awareness of the impact of a writer's choices of sentence length and structure

•• **6Rw5** Understand the use of conditionals, e.g. to express possibility

•• **6Rw6** Discuss and express preferences in terms of language, style and themes

•• **6Rw7** Understand aspects of narrative structure, e.g. the handling of time

•• **6Rw8** Analyse how paragraphs and chapters are structured and linked

•• **6Rw9** Read and interpret poems in which meanings are implied or multi-layered

•• **6Rw10** Explore the how poets manipulate and play with words and their sounds

•• **6Rw11** Explore the use of active and passive verbs within a sentence

•• **6Rw12** Understand changes over time in words and expressions and their use

•• **6Rw13** Identify uses of the colon, semi-colon, parenthetic commas, dashes and brackets

* Broad reading skills are not assessed in the tests.

**Recognise conventions and evaluate viewpoint, purpose, themes and ideas in texts**

•• **6Rv1** Recognise key characteristics of a range of non-fiction text types

•• **6Rv2** Understand the conventions of standard English usage in different forms of writing

•• **6Rv3** Understand language conventions and grammatical features of different types of text

•• **6Rv4** Compare the language, style and impact of a range of non-fiction writing

•• **6Rv5** Explore autobiography and biography, and first and third person narration

•• **6Rv6** Identify features of balanced written arguments

•• **6Rv7** Take account of viewpoint in a novel, and distinguish voice of author from that of narrator

•• **6Rv8** Begin to develop awareness that the context for which the writer is writing and the context in which the reader is reading can impact on how the text is understood

# Writing

**Develop broad writing skills***

•• **6Wo1** Continue to learn words, apply patterns and improve accuracy in spelling

•• **6Wo2** Use handwriting and IT effectively, making appropriate choices of presentation, to prepare writing for publication

•• **6Wo3** Develop a personal handwriting style to write legibly, fluently and with increasing speed, choosing the writing implement that is best suited for a task

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

•• **6Wa1** Establish and maintain a clear viewpoint, with some elaboration of personal voice

•• **6Wa2** Develop some imaginative detail through careful use of vocabulary and style

•• **6Wa3** Explore definitions and shades of meaning and use new words in context

•• **6Wa4** Use the styles and conventions of journalism to write reports on events

•• **6Wa5** Write a balanced report of a controversial issue

•• **6Wa6** Develop skills of writing biography and autobiography

•• **6Wa7** Adapt the conventions of a text type for a particular purpose

•• **6Wa8** Select appropriate non-fiction style and form to suit specific purposes

•• **6Wa9** Write non-chronological reports linked to work in other subjects

•• **6Wa10** Summarise a passage, chapter or text in a given number of words

•• **6Wa11** Argue a case in writing, developing points logically and convincingly

•• **6Wa12** Use different genres as models for writing

**Structure and organise ideas coherently using sections or paragraphs**

•• **6Wt1** Plan plot, characters and structure effectively in writing an extended story

•• **6Wt2** Use paragraphs, sequencing and linking them appropriately to support development of the text

•• **6Wt3** Manage the development of an idea throughout a piece of writing

•• **6Wt4** Use a range of devices to support cohesion within paragraphs

•• **6Wt5** Use connectives to structure an argument or discussion

* Broad writing skills are not assessed in the tests.

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

•• **6Wp1** Use a wide range of connectives to clarify relationships between ideas, e.g. however, therefore, although

•• **6Wp2** Develop grammatical control of complex sentences, manipulating them for effect

•• **6Wp3** Distinguish the main clause and other clauses in a complex sentence

•• **6Wp4** Develop increasing accuracy in using punctuation effectively to mark out the meaning in complex sentences

•• **6Wp5** Punctuate speech and use apostrophes accurately

**Use accurate spelling**

•• **6Ws1** Learn word endings with different spellings but the same pronunciation, e.g. *-tion*, *-cian*, *-sion*, *-ssion*; *-ance*, *-ence*

•• **6Ws2** Use correct choices when representing consonants, e.g. 'ck'/'k'/'ke'/'que'/'ch'; 'ch'/'tch'; 'j'/'dj'/'dje'

•• **6Ws3** Further investigate spelling rules and exceptions, including representing unstressed vowels

•• **6Ws4** Develop knowledge of word roots, prefixes and suffixes, including recognising variations, e.g. *im*, *in*, *ir*, *il*; *ad*, *ap*, *af*, *al* and knowing when to use double consonants

•• **6Ws5** Know how to transform meaning with prefixes and suffixes

•• **6Ws6** Explore word origins and derivations and the use of words from other languages

•• **6Ws7** Investigate meanings and spellings of connectives

# Speaking and listening

•• **6SL1** Express and explain ideas clearly, making meaning explicit and respond to guidance about, and feedback on, the quality of contributions

•• **6SL2** Use spoken language well to persuade, instruct or make a case, e.g. in a debate

•• **6SL3** Vary vocabulary, expression and tone of voice to engage the listener and suit the audience, purpose and context

•• **6SL4** Structure talk to aid a listener's understanding and engagement

•• **6SL5** Speak confidently in formal and informal contexts

•• **6SL6** Pay close attention in discussion to what others say, asking and answering questions to introduce new ideas

•• **6SL7** Help to move group discussion forward, e.g. by clarifying, summarising

•• **6SL8** Prepare, practise and improve a spoken presentation or performance

•• **6SL9** Convey ideas about characters in drama in different roles and scenarios through deliberate choice of speech, gesture and movement

•• **6SL10** Reflect on variations in speech, and appropriate use of standard English

# Science

## E Scientific enquiry

**Ep Ideas and evidence**

•• **6Ep1** Consider how scientists have combined evidence from observation and measurement with creative thinking to suggest new ideas and explanations for phenomena

•• **6Ep2** Collect evidence and data to test ideas including predictions

**Ep Plan investigative work**

•• **6Ep3** Discuss how to turn ideas into a form that can be tested

•• **6Ep4** Make predictions using scientific knowledge and understanding

•• **6Ep5** Choose what evidence to collect to investigate a question, ensuring that the evidence is sufficient

•• **6Ep6** Identify factors that are relevant to a particular situation

•• **6Ep7** Choose which equipment to use

**Eo Obtain and present evidence**

•• **6Eo1** Make a variety of relevant observations and measurements using simple apparatus correctly

•• **6Eo2** Decide when observations and measurements need to be checked by repeating to give more reliable data

•• **6Eo3** Use tables, bar charts and line graphs to present results

**Eo Consider evidence and approach**

•• **6Eo4** Make comparisons

•• **6Eo5** Evaluate repeated results

•• **6Eo6** Identify patterns in results and results that do not appear to fit the pattern

•• **6Eo7** Use results to draw conclusions and to make further predictions

•• **6Eo8** Suggest and evaluate explanations for predictions using scientific knowledge and understanding and communicate these clearly to others

•• **6Eo9** Say if and how evidence supports any prediction made


## B Biology

**Bh Humans and animals**

•• **6Bh1** Use scientific names for some major organs of body systems

•• **6Bh2** Identify the position of major organs in the body

•• **6Bh3** Describe the main functions of the major organs of the body

•• **6Bh4** Explain how the functions of the major organs are essential

**Be Living things in their environment**

•• **6Be1** Explore how humans have positive and negative effects on the environment, e.g. loss of species, protection of habitats

•• **6Be2** Explore a number of ways of caring for the environment, e.g. recycling, reducing waste, reducing energy consumption, not littering, encouraging others to care for the environment

•• **6Be3** Know how food chains can be used to represent feeding relationships in a habitat and present these in text and diagrams

•• **6Be4** Know that food chains begin with a plant (the producer), which uses energy from the sun

•• **6Be5** Understand the terms *producer*, *consumer*, *predator* and *prey*

•• **6Be6** Explore and construct food chains in a particular habitat

# C Chemistry

**Cc Material changes**

•• **6Cc1** Distinguish between reversible and irreversible changes

•• **6Cc2** Explore how solids can be mixed and how it is often possible to separate them again

•• **6Cc3** Observe, describe, record and begin to explain changes that occur when some solids are added to water

•• **6Cc4** Explore how, when solids do not dissolve or react with water, they can be separated by filtering, which is similar to sieving

•• **6Cc5** Explore how some solids dissolve in water to form solutions and, although the solid cannot be seen, the substance is still present


# P Physics

**Pf Forces and motion**

•• **6Pf1** Distinguish between mass measured in kilograms (kg) and weight measured in newtons, noting that kilograms are used in everyday life

•• **6Pf2** Recognise and use units of force, mass and weight and identify the direction in which forces act

•• **6Pf3** Understand the notion of energy in movement

•• **6Pf4** Recognise friction (including air resistance) as a force which can affect the speed at which objects move and which sometimes stops things moving

**Pm Electricity and magnetism**

•• **6Pm1** Investigate how some materials are better conductors of electricity than others

•• **6Pm2** Investigate how some metals are good conductors of electricity while most other materials are not

•• **6Pm3** Know why metals are used for cables and wires and why plastics are used to cover wires and as covers for plugs and switches

•• **6Pm4** Predict and test the effects of making changes to circuits, including length or thickness of wire and the number and type of components

•• **6Pm5** Represent series circuits with drawings and conventional symbols