

**CURRICULUM
OVERVIEW
YEAR 6**



**TRIDENT
PREPARATORY
LUSAKA**

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. $\frac{3}{1}$ 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. $\frac{4}{3}$ with $\frac{8}{7}$
- **6Nn22** Recognise equivalence between fractions, e.g. between $\frac{100}{1}$ s, $\frac{10}{1}$ s and $\frac{2}{1}$ 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. $\frac{8}{17}$ to $2\frac{8}{17}$
- **6Nn26** Reduce fractions to their simplest form, where this is $\frac{4}{1}$, $\frac{2}{1}$, $\frac{4}{3}$ 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 $\frac{2}{1}$, $\frac{4}{1}$, $\frac{3}{1}$, $\frac{10}{1}$, $\frac{100}{1}$ 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 ; $4.8 \div 6$
- **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 $17 \times$ table from $10 \times + 7 \times$ 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

G1 Length, mass and capacity

6G11 • 6M11 Select and use standard units of measure. Read and write to two or three decimal places

6G12 • 6M12 Convert between units of measurement (kg and g, l and ml, km, m, cm and mm), using decimals

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

6G13 • 6M13 Interpret readings on different scales, using a range of measuring instruments

6G14 • 6M14 Draw and measure lines to the nearest centimetre and millimetre

6G15 • 6M15 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 by using 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, parenthetical 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