Cambridge Assessment
International Education

Curriculum Framework

Cambridge Primary
Mathematics 0845

Cambridge
Pathway

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Contents

Introduction

Welcome to the Cambridge Primary Mathematics curriculum framework.

This framework provides a comprehensive set of progressive learning objectives for mathematics. The objectives detail what the learner should know or what they should be able to do in each year of primary education. The learning objectives provide a structure for teaching and learning and a reference against which learners' ability and understanding can be checked.

The Cambridge Primary Mathematics curriculum is presented in five content areas: *Number*, *Geometry*, *Measure*, *Handling data* and *Problem solving*. The first four content areas are all underpinned by *Problem solving,* which describes using techniques and skills and the application of understanding and strategies in solving problems. Mental strategies are also a key part of the *Number* content. This curriculum focuses on principles, patterns, systems, functions and relationships so that learners can apply their mathematical knowledge and develop a holistic understanding of the subject. The Cambridge Primary Mathematics curriculum framework provides a solid foundation upon which the later stages of education can be built.

The Cambridge Curriculum is founded on the values of the University of Cambridge and best practice in schools. The curriculum is dedicated to developing learners who are confident, responsible, innovative and engaged. Each curriculum framework for English, mathematics and science is designed to engage learners in an active and creative learning journey.

> **Note on codes**
>
> Each learning objective has a unique curriculum framework code, e.g. **1Nn1**. These codes appear in the Cambridge International Teacher Guide, schemes of work and other published resources. Each sub-strand has a blue reporting code, e.g. **Nn**. These codes appear in Checkpoint feedback reports. Stages 1 and 2 are not assessed and so do not have reporting codes. Similarly, *Problem solving* is not assessed separately and so does not have a reporting code.

Stage 1

Number

Numbers and the number system

- **1Nn1** Recite numbers in order (forwards from 1 to 100, backwards from 20 to 0)
- **1Nn2** Read and write numerals from 0 to 20
- **1Nn3** Count objects up to 20, recognising conservation of number
- **1Nn4** Count on in tens from zero or a single-digit number to 100 or just over
- **1Nn5** Count on in twos, beginning to recognise odd/even numbers to 20 as 'every other number'
- **1Nn6** Begin partitioning two-digit numbers into tens and ones and reverse
- **1Nn7** Within the range 0 to 30, say the number that is 1 or 10 more or less than any given number
- **1Nn8** Use more or less to compare two numbers, and give a number which lies between them
- **1Nn9** Order numbers to at least 20 positioning on a number track; use ordinal numbers
- **1Nn10** Use the = sign to represent equality
- **1Nn11** Give a sensible estimate of some objects that can be checked by counting, e.g. to 30
- **1Nn12** Find halves of small numbers and shapes by folding, and recognise which shapes are halved

Calculation

Mental strategies

- **1Nc1** Know all number pairs to 10 and record the related addition/subtraction facts
- **1Nc2** Begin to know number pairs to 6, 7, 8, 9 and 10
- **1Nc3** Add more than two small numbers, spotting pairs to 10, e.g. $4 + 3 + 6 = 10 + 3$
- **1Nc4** Begin using pairs to 10 to bridge 10 when adding/subtracting, e.g. $8 + 3$, add 2, then 1
- **1Nc5** Know doubles to at least double 5
- **1Nc6** Find near doubles using doubles already known, e.g. $5 + 6$
- **1Nc7** Begin to recognise multiples of 2 and 10

Addition and subtraction

- **1Nc8** Understand addition as counting on and combining two sets; record related addition sentences
- **1Nc9** Understand subtraction as counting back and 'take away'; record related subtraction sentences
- **1Nc10** Understand difference as 'how many more to make?'
- **1Nc11** Add/subtract a single-digit number by counting on/back
- **1Nc12** Find two more or less than a number to 20, recording the jumps on a number line
- **1Nc13** Relate counting on and back in tens to finding 10 more/less than a number (< 100)
- **1Nc14** Begin to use the +, – and = signs to record calculations in number sentences
- **1Nc15** Understand that changing the order of addition does not change the total
- **1Nc16** Add a pair of numbers by putting the larger number first and counting on
- **1Nc17** Recognise the use of a sign such as □ to represent an unknown, e.g. $6 + \square = 10$
- **1Nc18** Begin to add single- and two-digit numbers

Multiplication and division

- **1Nc19** Double any single-digit number
- **1Nc20** Find halves of even numbers of objects up to 10
- **1Nc21** Try to share numbers to 10 to find which are even and which are odd
- **1Nc22** Share objects into two equal groups in a context

Geometry

Shapes and geometric reasoning

- **1Gs1** Name and sort common 2D shapes (e.g. circles, squares, rectangles and triangles) using features such as number of sides, curved or straight. Use them to make patterns and models
- **1Gs2** Name and sort common 3D shapes (e.g. cube, cuboid, cylinder, cone and sphere) using features such as number of faces, flat or curved faces. Use them to make patterns and models
- **1Gs3** Recognise basic line symmetry

Position and movement

- **1Gp1** Use everyday language of direction and distance to describe movement of objects

Measure

Money

- **1Mm1** Recognise all coins and work out how to pay an exact sum using smaller coins

Length, mass and capacity

- **1Ml1** Compare lengths and weights by direct comparison, then by using uniform non-standard units
- **1Ml2** Estimate and compare capacities by direct comparison, then by using uniform non-standard units
- **1Ml3** Use comparative language, e.g. longer, shorter, heavier, lighter

Time

- **1Mt1** Begin to understand and use some units of time, e.g. minutes, hours, days, weeks, months and years
- **1Mt2** Read the time to the hour (o'clock) and know key times of day to the nearest hour
- **1Mt3** Order the days of the week and other familiar events

Handling data

Organising, categorising and representing data

- **1Dh1** Answer a question by sorting and organising data or objects in a variety of ways, e.g.
    - using block graphs and pictograms with practical resources; discussing the results
    - in lists and tables with practical resources; discussing the results
    - in Venn or Carroll diagrams giving different criteria for grouping the same objects

Problem solving

Using techniques and skills in solving mathematical problems

- **1Pt1** Choose appropriate strategies to carry out calculations, explaining working out
- **1Pt2** Explore number problems and puzzles
- **1Pt3** Find many combinations, e.g. combinations of three pieces of different coloured clothing
- **1Pt4** Decide to add or subtract to solve a simple word problem (oral), and represent it with objects
- **1Pt5** Check the answer to an addition by adding the numbers in a different order
- **1Pt6** Check the answer to a subtraction by adding the answer to the smaller number in the question
- **1Pt7** Describe and continue patterns such as count on and back in tens, e.g. 90, 80, 70
- **1Pt8** Identify simple relationships between numbers and shapes, e.g. this number is ten bigger than that number
- **1Pt9** Make a sensible estimate of a calculation, and consider whether an answer is reasonable

Stage 2

Number

Numbers and the number system

- **2Nn1** Count, read and write numbers to at least 100 and back again
- **2Nn2** Count up to 100 objects, e.g. beads on a bead bar
- **2Nn3** Count on in ones and tens from single- and two-digit numbers and back again
- **2Nn4** Count in twos, fives and tens, and use grouping in twos, fives or tens to count larger groups of objects
- **2Nn5** Begin to count on in small constant steps such as threes and fours
- **2Nn6** Know what each digit represents in two-digit numbers; partition into tens and ones
- **2Nn7** Find 1 or 10 more/less than any two-digit number
- **2Nn8** Round two-digit numbers to the nearest multiple of 10
- **2Nn9** Say a number between any given neighbouring pairs of multiples of 10, e.g. 40 and 50
- **2Nn10** Place a two-digit number on a number line marked off in multiples of ten
- **2Nn11** Recognise and use ordinal numbers up to at least the 10th number and beyond
- **2Nn12** Order numbers to 100; compare two numbers using the > and < signs
- **2Nn13** Give a sensible estimate of up to 100 objects, e.g. choosing from 10, 20, 50 or 100
- **2Nn14** Understand even and odd numbers and recognise these up to at least 20
- **2Nn15** Sort numbers, e.g. odd/even, multiples of 2, 5 and 10
- **2Nn16** Recognise that we write one half $\frac{1}{2}$, one quarter $\frac{1}{4}$ and three quarters $\frac{3}{4}$
- **2Nn17** Recognise that $\frac{2}{2}$ or $\frac{4}{4}$ make a whole and $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent
- **2Nn18** Recognise which shapes are divided in halves or quarters and which are not
- **2Nn19** Find halves and quarters of shapes and small numbers of objects

Calculation

Mental strategies

- **2Nc1** Find and learn by heart all number pairs to 10 and pairs with a total of 20
- **2Nc2** Partition all numbers to 20 into pairs and record the related addition and subtraction facts
- **2Nc3** Find all pairs of multiples of 10 with a total of 100 and record the related addition and subtraction facts
- **2Nc4** Learn and recognise multiples of 2, 5 and 10 and derive the related division facts
- **2Nc5** Find and learn doubles for all numbers up to 10 and also 15, 20, 25 and 50

Addition and subtraction

- **2Nc6** Relate counting on/back in tens to finding 10 more/less than any two-digit number and then to adding and subtracting other multiples of 10, e.g. 75 – 30
- **2Nc7** Use the = sign to represent equality, e.g. 16 + 4 = 17 + 3
- **2Nc8** Add four or five small numbers together
- **2Nc9** Recognise the use of a symbol such as □ or Δ to represent an unknown, e.g. Δ + □ = 10
- **2Nc10** Solve number sentences such as 27 + □ = 30
- **2Nc11** Add and subtract a single digit to and from a two-digit number
- **2Nc12** Add pairs of two-digit numbers

- **2Nc13** Find a small difference between pairs of two-digit numbers
- **2Nc14** Understand that addition can be done in any order, but subtraction cannot
- **2Nc15** Understand subtraction as both difference and take away

Multiplication and division

- **2Nc16** Understand multiplication as repeated addition and use the × sign
- **2Nc17** Understand multiplication as describing an array
- **2Nc18** Understand division as grouping and use the ÷ sign
- **2Nc19** Use counting in twos, fives or tens to solve practical problems involving repeated addition
- **2Nc20** Find doubles of multiples of 5 up to double 50 and corresponding halves
- **2Nc21** Double two-digit numbers
- **2Nc22** Work out multiplication and division facts for the 3× and 4× tables
- **2Nc23** Understand that division can leave some left over

Geometry

Shapes and geometric reasoning

- **2Gs1** Sort, name, describe, visualise and draw 2D shapes (e.g. squares, rectangles, circles, regular and irregular pentagons and hexagons) referring to their properties; recognise common 2D shapes in different positions and orientations
- **2Gs2** Sort, name, describe and make 3D shapes (e.g. cubes, cuboids, cones, cylinders, spheres and pyramids) referring to their properties; recognise 2D drawings of 3D shapes
- **2Gs3** Identify reflective symmetry in patterns and 2D shapes; draw lines of symmetry
- **2Gs4** Find examples of 2D and 3D shape and symmetry in the environment

Position and movement

- **2Gp1** Follow and give instructions involving position, direction and movement
- **2Gp2** Recognise whole, half and quarter turns, both clockwise and anti-clockwise
- **2Gp3** Recognise that a right angle is a quarter turn

Measure

Money

- **2Mm1** Recognise all coins and notes
- **2Mm2** Use money notation
- **2Mm3** Find totals and the coins and notes required to pay a given amount; work out change

Length, mass and capacity

- **2Ml1** Estimate, measure and compare lengths, weights and capacities, choosing and using suitable uniform non-standard and standard units and appropriate measuring instruments
- **2Ml2** Compare lengths, weights and capacities using the standard units: centimetre, metre, 100 g, kilogram, and litre

Time

- **2Mt1** Know the units of time (seconds, minutes, hours, days, weeks, months and years)
- **2Mt2** Know the relationships between consecutive units of time
- **2Mt3** Read the time to the half hour on digital and analogue clocks
- **2Mt4** Measure activities using seconds and minutes
- **2Mt5** Know and order the days of the week and the months of the year

Handling data

Organising, categorising and representing data

- **2Dh1** Answer a question by collecting and recording data in lists and tables, and representing it as block graphs and pictograms to show results
- **2Dh2** Use Carroll and Venn diagrams to sort numbers or objects using one criterion; begin to sort numbers and objects using two criteria; explain choices using appropriate language, including 'not'

Problem solving

Using techniques and skills in solving mathematical problems

- **2Pt1** Choose appropriate mental strategies to carry out calculations and explain how they worked out the answer
- **2Pt2** Explain methods and reasoning orally
- **2Pt3** Explore number problems and puzzles
- **2Pt4** Make sense of simple word problems (single and easy two-step), decide what operations (addition or subtraction, simple multiplication or division) are needed to solve them and, with help, represent them, with objects or drawings or on a number line
- **2Pt5** Make up a number story to go with a calculation, including in the context of money
- **2Pt6** Check the answer to an addition by adding the numbers in a different order or by using a different strategy, e.g. 35 + 19 by adding 20 to 35 and subtracting 1, and by adding 30 + 10 and 5 + 9
- **2Pt7** Check a subtraction by adding the answer to the smaller number in the original subtraction
- **2Pt8** Describe and continue patterns which count on in twos, threes, fours or fives to 30 or more
- **2Pt9** Identify simple relationships between numbers and shapes, e.g. this number is double …; these shapes all have … sides
- **2Pt10** Make a sensible estimate for the answer to a calculation
- **2Pt11** Consider whether an answer is reasonable

Stage 3

N Number

Nn Numbers and the number system

- **3Nn1** Recite numbers 100 to 200 and beyond
- **3Nn2** Read and write numbers to at least 1000
- **3Nn3** Count on and back in ones, tens and hundreds from two- and three-digit numbers
- **3Nn4** Count on and back in steps of 2, 3, 4 and 5 to at least 50
- **3Nn5** Understand what each digit represents in three-digit numbers and partition into hundreds, tens and units
- **3Nn6** Find 1, 10, 100 more/less than two- and three-digit numbers
- **3Nn7** Multiply two-digit numbers by 10 and understand the effect
- **3Nn8** Round two-digit numbers to the nearest 10 and round three-digit numbers to the nearest 100
- **3Nn9** Place a three-digit number on a number line marked off in multiples of 100
- **3Nn10** Place a three-digit number on a number line marked off in multiples of 10
- **3Nn11** Compare three-digit numbers, use < and > signs, and find a number in between
- **3Nn12** Order two- and three-digit numbers
- **3Nn13** Give a sensible estimate of a number as a range (e.g. 30 to 50) by grouping in tens
- **3Nn14** Find half of odd and even numbers to 40, using notation such as $13\frac{1}{2}$
- **3Nn15** Understand and use fraction notation recognising that fractions are several parts of one whole, e.g. $\frac{3}{4}$ is three quarters and $\frac{2}{3}$ is two thirds
- **3Nn16** Recognise equivalence between $\frac{1}{2}$, $\frac{2}{4}$, $\frac{4}{8}$ and $\frac{5}{10}$ using diagrams
- **3Nn17** Recognise simple mixed fractions, e.g. $1\frac{1}{2}$ and $2\frac{1}{4}$
- **3Nn18** Order simple or mixed fractions on a number line, e.g. using the knowledge that $\frac{1}{2}$ comes half way between $\frac{1}{4}$ and $\frac{3}{4}$, and that $1\frac{1}{2}$ comes half way between 1 and 2
- **3Nn19** Begin to relate finding fractions to division
- **3Nn20** Find halves, thirds, quarters and tenths of shapes and numbers (whole number answers)

Nc Calculation

Mental strategies

- **3Nc1** Know addition and subtraction facts for all numbers to 20
- **3Nc2** Know the following addition and subtraction facts:
  - multiples of 100 with a total of 1000
  - multiples of 5 with a total of 100
- **3Nc3** Know multiplication/division facts for 2×, 3×, 5× and 10× tables
- **3Nc4** Begin to know 4× table
- **3Nc5** Recognise two- and three-digit multiples of 2, 5 and 10
- **3Nc6** Work out quickly the doubles of numbers 1 to 20 and derive the related halves
- **3Nc7** Work out quickly the doubles of multiples of 5 (< 100) and derive the related halves
- **3Nc8** Work out quickly the doubles of multiples of 50 to 500

Addition and subtraction

- **3Nc9** Add and subtract 10 and multiples of 10 to and from two- and three-digit numbers
- **3Nc10** Add 100 and multiples of 100 to three-digit numbers
- **3Nc11** Use the = sign to represent equality, e.g. 75 + 25 = 95 + 5
- **3Nc12** Add several small numbers
- **3Nc13** Find complements to 100, solving number equations such as 78 + □ = 100
- **3Nc14** Add and subtract pairs of two-digit numbers
- **3Nc15** Add three-digit and two-digit numbers using notes to support
- **3Nc16** Re-order an addition to help with the calculation, e.g. 41 + 54, by adding 40 to 54, then 1
- **3Nc17** Add/subtract single-digit numbers to/from three-digit numbers
- **3Nc18** Find 20, 30, … 90, 100, 200, 300 more/less than three-digit numbers

Multiplication and division

- **3Nc19** Understand the relationship between halving and doubling
- **3Nc20** Understand the effect of multiplying two-digit numbers by 10
- **3Nc21** Multiply single-digit numbers and divide two-digit numbers by 2, 3, 4, 5, 6, 9 and 10
- **3Nc22** Multiply teens numbers by 3 and 5
- **3Nc23** Begin to divide two-digit numbers just beyond 10× tables, e.g. 60 ÷ 5, 33 ÷ 3
- **3Nc24** Understand that division can leave a remainder (initially as 'some left over')
- **3Nc25** Understand and apply the idea that multiplication is commutative
- **3Nc26** Understand the relationship between multiplication and division and write connected facts

G Geometry

Gs Shapes and geometric reasoning

- **3Gs1** Identify, describe and draw regular and irregular 2D shapes including pentagons, hexagons, octagons and semi-circles
- **3Gs2** Classify 2D shapes according to the number of sides, vertices and right angles
- **3Gs3** Identify, describe and make 3D shapes including pyramids and prisms; investigate which nets will make a cube
- **3Gs4** Classify 3D shapes according to the number and shape of faces, number of vertices and edges
- **3Gs5** Draw and complete 2D shapes with reflective symmetry and draw reflections of shapes (mirror line along one side)
- **3Gs6** Relate 2D shapes and 3D solids to drawings of them
- **3Gs7** Identify 2D and 3D shapes, lines of symmetry and right angles in the environment
- **3Gs8** Identify right angles in 2D shapes

Gp Position and movement

- **3Gp1** Use the language of position, direction and movement, including clockwise and anti-clockwise
- **3Gp2** Find and describe the position of a square on a grid of squares where the rows and columns are labelled
- **3Gp3** Use a set square to draw right angles
- **3Gp4** Compare angles with a right angle and recognise that a straight line is equivalent to two right angles

G Measure

Gm Money

3Gm1 • **3Mm1** Consolidate using money notation

3Gm2 • **3Mm2** Use addition and subtraction facts with a total of 100 to find change

Gl Length, mass and capacity

3Gl1 • **3Ml1** Choose and use appropriate units and equipment to estimate, measure and record measurements

3Gl2 • **3Ml2** Know the relationship between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres

3Gl3 • **3Ml3** Read to the nearest division or half division, use scales that are numbered or partially numbered

3Gl4 • **3Ml4** Use a ruler to draw and measure lines to the nearest centimetre

3Gl5 • **3Ml5** Solve word problems involving measures

Gt Time

3Gt1 • **3Mt1** Suggest and use suitable units to measure time and know the relationships between them (second, minute, hour, day, week, month, year)

3Gt2 • **3Mt2** Read the time on analogue and digital clocks, to the nearest 5 minutes on an analogue clock and to the nearest minute on a digital clock

3Gt3 • **3Mt3** Begin to calculate simple time intervals in hours and minutes

3Gt4 • **3Mt4** Read a calendar and calculate time intervals in weeks or days

D Handling data

Dh Organising, categorising and representing data

- **3Dh1** Answer a real-life question by collecting, organising and interpreting data, e.g. investigating the population of mini-beasts in different environments
- **3Dh2** Use tally charts, frequency tables, pictograms (symbol representing one or two units) and bar charts (intervals labelled in ones or twos)
- **3Dh3** Use Venn or Carroll diagrams to sort data and objects using two criteria

Problem solving

Using techniques and skills in solving mathematical problems

- **3Pt1** Choose appropriate mental strategies to carry out calculations
- **3Pt2** Begin to understand everyday systems of measurement in length, weight, capacity and time and use these to make measurements as appropriate
- **3Pt3** Make sense of and solve word problems, single (all four operations) and two-step (addition and subtraction), and begin to represent them, e.g. with drawings or on a number line
- **3Pt4** Check the results of adding two numbers using subtraction, and several numbers by adding in a different order
- **3Pt5** Check subtraction by adding the answer to the smaller number in the original calculation
- **3Pt6** Check multiplication by reversing the order, e.g. checking that $6 \times 4 = 24$ by doing 4×6

- **3Pt7** Check a division using multiplication, e.g. check $12 \div 4 = 3$ by doing 4×3
- **3Pt8** Recognise the relationships between different 2D shapes
- **3Pt9** Identify the differences and similarities between different 3D shapes
- **3Pt10** Estimate and approximate when calculating, and check working
- **3Pt11** Make a sensible estimate for the answer to a calculation, e.g. using rounding
- **3Pt12** Consider whether an answer is reasonable

Using understanding and strategies in solving problems

- **3Ps1** Make up a number story to go with a calculation, including in the context of money
- **3Ps2** Explain a choice of calculation strategy and show how the answer was worked out
- **3Ps3** Explore and solve number problems and puzzles, e.g. logic problems
- **3Ps4** Use ordered lists and tables to help to solve problems systematically
- **3Ps5** Describe and continue patterns which count on or back in steps of 2, 3, 4, 5, 10, or 100
- **3Ps6** Identify simple relationships between numbers, e.g. each number is three more than the number before it
- **3Ps7** Identify simple relationships between shapes, e.g. these shapes all have the same number of lines of symmetry
- **3Ps8** Investigate a simple general statement by finding examples which do or do not satisfy it, e.g. when adding 10 to a number, the first digit remains the same
- **3Ps9** Explain methods and reasoning orally, including initial thoughts about possible answers to a problem

Stage 4

N Number

Nn Numbers and the number system

- **4Nn1** Read and write numbers up to 10 000
- **4Nn2** Count on and back in ones, tens, hundreds and thousands from four-digit numbers
- **4Nn3** Understand what each digit represents in a three- or four-digit number and partition into thousands, hundreds, tens and units
- **4Nn4** Use decimal notation and place value for tenths and hundredths in context, e.g. order amounts of money; convert a sum of money such as $13.25 to cents, or a length such as 125 cm to metres; round a sum of money to the nearest pound
- **4Nn5** Understand decimal notation for tenths and hundredths in context, e.g. length
- **4Nn6** Find multiples of 10, 100, 1000 more/less than numbers of up to four digits, e.g. 3407 + 20 = 3427
- **4Nn7** Multiply and divide three-digit numbers by 10 (whole number answers) and understand the effect; begin to multiply numbers by 100 and perform related divisions
- **4Nn8** Recognise multiples of 5, 10 and 100 up to 1000
- **4Nn9** Round three- and four-digit numbers to the nearest 10 or 100
- **4Nn10** Position accurately numbers up to 1000 on an empty number line or line marked off in multiples of 10 or 100
- **4Nn11** Estimate where three- and four-digit numbers lie on empty 0–1000 or 0–10 000 lines
- **4Nn12** Compare pairs of three-digit or four-digit numbers, using the > and < signs, and find a number in between each pair
- **4Nn13** Use negative numbers in context, e.g. temperature
- **4Nn14** Recognise and extend number sequences formed by counting in steps of constant size, extending beyond zero when counting back
- **4Nn15** Recognise odd and even numbers
- **4Nn16** Make general statements about the sums and differences of odd and even numbers
- **4Nn17** Order and compare two or more fractions with the same denominator (halves, quarters, thirds, fifths, eighths or tenths)
- **4Nn18** Recognise the equivalence between: $\frac{1}{2}$, $\frac{4}{8}$ and $\frac{5}{10}$; $\frac{1}{4}$ and $\frac{2}{8}$; $\frac{1}{5}$ and $\frac{2}{10}$
- **4Nn19** Use equivalence to help order fractions, e.g. $\frac{7}{10}$ and $\frac{3}{4}$
- **4Nn20** Understand the equivalence between one-place decimals and fractions in tenths
- **4Nn21** Understand that $\frac{1}{2}$ is equivalent to 0.5 and also to $\frac{5}{10}$
- **4Nn22** Recognise the equivalence between the decimal fraction and vulgar fraction forms of halves, quarters, tenths and hundredths
- **4Nn23** Recognise mixed numbers, e.g. $5\frac{3}{4}$, and order these on a number line
- **4Nn24** Relate finding fractions to division
- **4Nn25** Find halves, quarters, thirds, fifths, eighths and tenths of shapes and numbers

Nc Calculation

Mental strategies

- **4Nc1** Derive quickly pairs of two-digit numbers with a total of 100, e.g. $72 + \square = 100$
- **4Nc2** Derive quickly pairs of multiples of 50 with a total of 1000, e.g. $850 + \square = 1000$
- **4Nc3** Identify simple fractions with a total of 1, e.g. $\frac{1}{4} + \square = 1$
- **4Nc4** Know multiplication for 2×, 3×, 4×, 5×, 6×, 9× and 10× tables and derive division facts
- **4Nc5** Recognise and begin to know multiples of 2, 3, 4, 5 and 10, up to the tenth multiple
- **4Nc6** Add three or four small numbers, finding pairs that equal 10 or 20
- **4Nc7** Add three two-digit multiples of 10, e.g. $40 + 70 + 50$
- **4Nc8** Add and subtract near multiples of 10 or 100 to or from three-digit numbers, e.g. $367 - 198$ or $278 + 49$
- **4Nc9** Add any pair of two-digit numbers, choosing an appropriate strategy
- **4Nc10** Subtract any pair of two-digit numbers, choosing an appropriate strategy
- **4Nc11** Find a difference between near multiples of 100, e.g. $304 - 296$
- **4Nc12** Subtract a small number crossing 100, e.g. $304 - 8$
- **4Nc13** Multiply any pair of single-digit numbers together
- **4Nc14** Use knowledge of commutativity to find the easier way to multiply
- **4Nc15** Understand the effect of multiplying and dividing three-digit numbers by 10
- **4Nc16** Derive quickly doubles of all whole numbers to 50, doubles of multiples of 10 to 500, doubles of multiples of 100 to 5000, and corresponding halves

Addition and subtraction

- **4Nc17** Add pairs of three-digit numbers
- **4Nc18** Subtract a two-digit number from a three-digit number
- **4Nc19** Subtract pairs of three-digit numbers

Multiplication and division

- **4Nc20** Double any two-digit number
- **4Nc21** Multiply multiples of 10 to 90 by a single-digit number
- **4Nc22** Multiply a two-digit number by a single-digit number
- **4Nc23** Divide two-digit numbers by single digit-numbers (answers no greater than 20)
- **4Nc24** Decide whether to round up or down after division to give an answer to a problem
- **4Nc25** Understand that multiplication and division are the inverse function of each other
- **4Nc26** Begin to understand simple ideas of ratio and proportion, e.g. a picture is one fifth the size of the real dog. It is 25 cm long in the picture, so it is 5×25 cm long in real life

G Geometry

Gs Shapes and geometric reasoning

- **4Gs1** Identify, describe, visualise, draw and make a wider range of 2D and 3D shapes including a range of quadrilaterals, the heptagon and tetrahedron; use pinboards to create a range of polygons. Use spotty paper to record results
- **4Gs2** Classify polygons (including a range of quadrilaterals) using criteria such as the number of right angles, whether or not they are regular and their symmetrical properties
- **4Gs3** Identify and sketch lines of symmetry in 2D shapes and patterns
- **4Gs4** Visualise 3D objects from 2D nets and drawings and make nets of common solids
- **4Gs5** Find examples of shapes and symmetry in the environment and in art

Gp Position and movement

- **4Gp1** Describe and identify the position of a square on a grid of squares where rows and columns are numbered and/or lettered
- **4Gp2** Know that angles are measured in degrees and that one whole turn is 360° or four right angles; compare and order angles less than 180°
- **4Gp3** Devise the directions to give to follow a given path

G Measure

Gl Length, mass and capacity

- **4Gl1** • **4Ml1** Choose and use standard metric units and their abbreviations (km, m, cm, mm, kg, g, *l* and m*l*) when estimating, measuring and recording length, weight and capacity
- **4Gl2** • **4Ml2** Know and use the relationships between familiar units of length, mass and capacity; know the meaning of 'kilo', 'centi' and 'milli'
- **4Gl3** • **4Ml3** Where appropriate, use decimal notation to record measurements, e.g. 1.3 m, 0.6 kg, 1.2 *l*
- **4Gl4** • **4Ml4** Interpret intervals/divisions on partially numbered scales and record readings accurately

Gt Time

- **4Gt1** • **4Mt1** Read and tell the time to nearest minute on 12-hour digital and analogue clocks
- **4Gt2** • **4Mt2** Use a.m., p.m. and 12-hour digital clock notation
- **4Gt3** • **4Mt3** Read simple timetables and use a calendar
- **4Gt4** • **4Mt4** Choose units of time to measure time intervals

Ga Area and perimeter

- **4Ga1** • **4Ma1** Draw rectangles, and measure and calculate their perimeters
- **4Ga2** • **4Ma2** Understand that area is measured in square units, e.g. cm^2
- **4Ga3** • **4Ma3** Find the area of rectilinear shapes drawn on a square grid by counting squares

D Handling data

Dh Organising, categorising and representing data

- **4Dh1** Answer a question by identifying what data to collect, organising, presenting and interpreting data in tables, diagrams, tally charts, frequency tables, pictograms (symbol representing 2, 5, 10 or 20 units) and bar charts (intervals labelled in twos, fives, tens or twenties)
- **4Dh2** Compare the impact of representations where scales have different intervals
- **4Dh3** Use Venn diagrams or Carroll diagrams to sort data and objects using two or three criteria

Problem solving

Using techniques and skills in solving mathematical problems

- **4Pt1** Choose appropriate mental or written strategies to carry out calculations involving addition or subtraction
- **4Pt2** Understand everyday systems of measurement in length, weight, capacity and time and use these to solve simple problems as appropriate
- **4Pt3** Check the results of adding numbers by adding them in a different order or by subtracting one number from the total
- **4Pt4** Check subtraction by adding the answer to the smaller number in the original calculation
- **4Pt5** Check multiplication using a different technique, e.g. check $6 \times 8 = 48$ by doing 6×4 and doubling
- **4Pt6** Check the result of a division using multiplication, e.g. multiply 4 by 12 to check $48 \div 4$
- **4Pt7** Recognise the relationships between 2D shapes and identify the differences and similarities between 3D shapes
- **4Pt8** Estimate and approximate when calculating, and check working

Using understanding and strategies in solving problems

- **4Ps1** Make up a number story for a calculation, including in the context of measures
- **4Ps2** Explain reasons for a choice of strategy when multiplying or dividing
- **4Ps3** Choose strategies to find answers to addition or subtraction problems; explain and show working
- **4Ps4** Explore and solve number problems and puzzles, e.g. logic problems
- **4Ps5** Use ordered lists and tables to help to solve problems systematically
- **4Ps6** Describe and continue number sequences, e.g. 7, 4, 1, –2 … identifying the relationship between each number
- **4Ps7** Identify simple relationships between shapes, e.g. these polygons are all regular because …
- **4Ps8** Investigate a simple general statement by finding examples which do or do not satisfy it
- **4Ps9** Explain methods and reasoning orally and in writing; make hypotheses and test them out

Stage 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: $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$; $\frac{1}{3}$ and $\frac{1}{6}$; $\frac{1}{5}$ and $\frac{1}{10}$
- **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 $\frac{7}{10}$
- **5Nn17** Change an improper fraction to a mixed number, e.g. $\frac{7}{4}$ to $1\frac{3}{4}$; 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 of quantities.
- **5Nn20** Express halves, tenths and hundredths as percentages
- **5Nn21** Use fractions to describe and estimate a simple proportion, e.g. $\frac{1}{5}$ 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 (cm^2)

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, □, □, –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

Stage 6

As in Stage 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

- **6Nn1** Count on and back in fractions and decimals, e.g. $\frac{1}{3}$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 0–10 000 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. $\frac{3}{4}$ with $\frac{7}{8}$
- **6Nn22** Recognise equivalence between fractions, e.g. between $\frac{1}{100}$s, $\frac{1}{10}$s and $\frac{1}{2}$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. $\frac{17}{8}$ to $2\frac{1}{8}$
- **6Nn26** Reduce fractions to their simplest form, where this is $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{10}$, $\frac{1}{100}$ 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× 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 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

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