DATA HANDLING
- Describe and predict outcomes from data using the language of chance or likelihood
- Use the language associated with probability to discuss events, including those with equally likely outcomes
- Solve problems by collecting, selecting, processing, presenting and interpreting data, using ICT where appropriate; draw conclusions and identify further questions to ask.
- Solve a problem by representing, extracting and interpreting data in tables, graphs, charts and diagrams, including those generated by a computer, for example:
  ⇒ line graphs (eg for distance/time; a multiplication table; a conversion graph; a graph of pairs of numbers adding to 8)
  ⇒ frequency tables and bar charts with grouped discrete data (eg test marks 0-5, 6-10, 11-15)
- Construct and interpret frequency tables, bar charts with grouped discrete data, and line graphs; interpret pie charts
- Describe and interpret results and solutions to problems using the mode, range, median and mean

MEASURING
- Select and use standard metric units of measure and convert between units using decimals to two places notation, e.g. change 2.75 litres to 2750 ml, or vice versa
- Use, read and write standard metric units (km, m, cm, mm, kg, g, l, ml, cl), including their abbreviations, and relationships between them.
- Convert smaller to larger units (eg m to km, cm or mm to m, g to kg, ml to l) and vice versa.
- Know imperial units (mile, pint, gallon, lb, oz).
- Know rough equivalents of lb and kg, oz and g, miles and km, litres and pints or gallons.
- Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity.
- Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales, for example when using different instruments.
- Record estimates and readings from scales to a suitable degree of accuracy.

UNDERSTANDING SHAPE Properties of shape
- Describe, identify and visualise parallel and perpendicular edges or faces and use these properties to classify 2-D shapes and 3-D solids
- Describe and visualise properties of solid shapes such as parallel or perpendicular faces or edges
- Classify quadrilaterals, using criteria such as parallel sides, equal angles, equal sides . . .
- Make and draw shapes with increasing accuracy and apply knowledge of their properties
- Visualise 3-D shapes from 2-D drawings and identify different nets for a closed cube

UNDERSTANDING SHAPE Position and direction
- Visualise and draw on grids of different types where a shape will be after reflection, after translations or after rotation through 90° or 180° about its centre or one of its vertices
- Recognise where a shape will be after reflection:
  ⇒ in a mirror line touching the shape at a point (sides of shape not necessarily parallel or perpendicular to the mirror line)
  ⇒ in two mirror lines at right angles (sides of shape all parallel or perpendicular to the mirror line)
- Recognise where a shape will be after two translations

Christ Church
Primary SW9
A school for everyone

A Parent's Guide to Maths in Year Six

This booklet contains the skills the children should know by the end of Year Six. They are the are the key mathematical skills that children need to know in this year group.

The skills are taken from the National Curriculum. If you wish to see the full mathematics curriculum please visit
www.gov.uk/government/collections/national-curriculum

For more information about what is being taught in other year groups at Christ Church Primary SW9 and to view our Calculation Policy please visit our school website at www.christchurchschool.cc

YEAR 6

COUNTING AND UNDERSTANDING NUMBER
Place value, ordering and rounding
- Multiply and divide decimals mentally by 10 or 100, and whole numbers by 1000
- Rounding an integer to the nearest 10, 100 or 1000.
- Find the difference between a positive and a negative integers
- Find the difference between two negative integers, in a context such as temperature or the number line
- Order a set of positive and negative whole numbers.

Properties of numbers and number sequences
- Recognise and extend number sequences, such as the sequence of square numbers, or the sequence of triangular numbers
- Count on in steps of 0.1, 0.2, 0.25, 0.5…, and then back.
- Make general statements about odd or even numbers, including the outcome of products.
- Recognise multiples up to 10 x 10.
- Know and apply simple tests of divisibility.
- Find simple common multiples.
- Recognise squares of numbers to at least 12x12.
- Recognise prime numbers less than 100
- Factorise numbers to 100 into prime factors.

Knowing and using number facts
- Know by heart all multiplication and division facts up to 10x10
- Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals *e.g. 0.8 × 7, 4.8 ÷ 6*
- Derive quickly:
  ⇒ doubles of two-digit numbers (and the corresponding halves)
  ⇒ doubles of multiples of 10 to 1000 (and the corresponding halves)
  ⇒ doubles of multiples of 100 to 10 000 (and the corresponding halves)

Fractions, decimals, percentages, ratio and proportion
- Change a fraction such as 33/8 to the equivalent mixed number 41/8, and vice versa
- Recognise relationships between fractions: for example, that 1/10 is ten times 1/100, and 1/16 is half of 1/8.
- Reduce a fraction to its simplest form by cancelling common factors in the numerator and denominator 2/16 = 1/8
- Order fractions such as 2/3, 3/4 and 5/6 by converting them to fractions with a common denominator, and position them on a number line.
- Use a fraction as an 'operator' to find fractions, including tenths and hundredths, of numbers or quantities e.g. 5/8 of 32, 7/10 of 40, 9/100 of 400centimetres
- Solve simple problems involving ratio and proportion.
- Use decimal notation for tenths and hundredths in calculations, and tenths, hundredths and thousandths when recording measurements.
- Know what each digit represents in a number with up to three decimal places.
- Give a decimal fraction lying between two others (e.g. between 3.4 and 3.5).
- Order a mixed set of numbers or measurements with up to three decimal places.
- Round a number with two decimal places to the nearest tenth or to the nearest whole number
- Recognise equivalence between decimal and fraction forms of one half, one quarter, three quarters, one eighth and tenths, hundredths and thousandths eg 700/1000 = 70/100 = 7/10 = 0.7
- Begin to convert a fraction to a decimal using division.
- Understand percentage as the number of parts in every 100.
- Express simple fractions such as one half, one quarter, three quarters, one third, two thirds…, and tenths and hundredths, as percentages e.g. know that 1/3 = 331/3%
- Find simple percentages of small whole-number quantities e.g. find 10% of £500, then 20%, 40% and 80% by doubling

CALCULATIONS Addition and subtraction
Mental calculation strategies (+ and −)
- Consolidate all strategies from previous year, including:
  ⇒ find a difference by counting up;
  ⇒ add or subtract the nearest multiple of 10, 100 or 1000, then adjust;
  ⇒ use the relationship between addition and subtraction;
  ⇒ add several numbers.
- Use known number facts and place value to consolidate mental addition/subtraction e.g. 470 + 380, 810 − 380, 7.4 + 9.8, 9.2 − 8.6

Pencil and paper procedures (+ and −)
- Use informal pencil and paper methods to support, record or explain additions and subtractions
- Extend written methods to column addition and subtraction of numbers involving decimals.

CALCULATIONS Multiplication and division
Understanding multiplication and division
- Understand and use the relationships between the four operations
- Understand the use of brackets in a calculation.
- Express a remainder as a fraction or as a decimal rounded to one decimal place. Divide £.p by a two-digit number to give £.p.
- Round up or down after division, depending on the context.

Mental calculation strategies (x and ÷)
- Use related facts and doubling or halving to solve multiplication and division questions mentally. For example:
  ⇒ double or halve the most significant digit first;
  ⇒ to multiply by 25, multiply by 100 and divide by 4;
  ⇒ double one number and halve the other;
  ⇒ find the x24 table by doubling the x6 table twice.
  ⇒ use factors (e.g. 35 x 18 = 35 x 6 x 3).
  ⇒ use closely related facts: for example, multiply by 49 or 51 by multiplying by 50 and adjusting.
  ⇒ develop the x 17 table by adding facts from the x 10 and x 7 tables.
  ⇒ partition (e.g. 87 x 6 = (80 x 6) + (7 x 6); 3.4 x 3 = (3 x 3) + (0.4 x 3)).
  ⇒ use the relationship between multiplication and division.
  ⇒ use known number facts and place value to consolidate mental multiplication and division.

Pencil and paper procedures (x and ÷)
- Approximate first.
- Use informal pencil and paper methods to support, record or explain multiplications and divisions.
- Extend written methods to:
  ⇒ multiplication of ThHTU x U (short multiplication);
  ⇒ short multiplication of numbers involving decimals;
  ⇒ long multiplication of a three-digit by a two-digit integer;
  ⇒ short division of TU or HTU by U (mixed-number answer);
  ⇒ division of HTU by TU (long division, whole-number answer);
  ⇒ short division of numbers involving decimals.