Y6 Maths Curriculum - Parent Guide

The aim of this document is to give an at-a-glance guide to how maths is taught at Chelmondiston and how it progresses through topics. In each of the major topic areas (Number, Measurement, Geometry and Statistics), the curriculum has been broken down into key areas. For each of these areas, you can see which National Curriculum objectives are covered in Year 6 and when this objective is first introduced as well as any prior learning.

Place Value		**Prior Learning**
Read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit	Autumn 1	• Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Count forwards and backwards with positive and negative whole numbers, including through zero • Read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals • Order and compare numbers to at least 1 000 000 and determine the value of each digit • Interpret negative numbers in context • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Solve number problems and practical problems that involve all of the above
Order and compare numbers up to 10 000 000 and determine the value of each digit	Autumn 1	
Round any whole number to a required degree of accuracy	Autumn 1	
Use negative numbers in context, and calculate intervals across zero	Autumn 1	
Solve number and practical problems that involve all of the above	Autumn 1	
Addition and Subtraction		**Prior Learning**
Perform mental calculations, including with mixed operations and large numbers	Autumn 1	• Add and subtract whole numbers with more than 4 digits, including using formal

Use their knowledge of the order of operations to carry out calculations involving the four operations	Autumn 1	written methods (columnar addition and subtraction) • Add and subtract numbers mentally with increasingly large numbers • Solve addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and why • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
Solve addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and why	Autumn 1	
Multiplication and Division		**Prior Learning**
Identify common factors, common multiples and prime numbers	Autumn 1	• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19 • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • Multiply numbers up to 4 digits by a one- or two- digit number using a formal written method, including long multiplication for two-digit numbers • Multiply and divide numbers mentally drawing upon known facts • Divide numbers up to 4
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Autumn 1	
Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Autumn 1	
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	Autumn 1	
Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	Autumn 1	

Perform mental calculations, including with mixed operations and large numbers	Autumn 1	digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
Solve problems involving addition, subtraction, multiplication and division	Autumn 1	
Use their knowledgecof the order of operations to carry out calculations involving the four operations	Autumn 1	
Fractions		**Prior Learning**
Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Autumn 2	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$] • Compare and order fractions whose denominators are all multiples of the same number • Add and subtract
Compare and order fractions, including fractions > 1	Autumn 2	
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Autumn 2	
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4}x\frac{1}{2}=\frac{1}{8}$]	Spring 1	
Divide proper fractions by whole numbers [for example, $\frac{1}{3}\div$	Spring 1	

2 = $\frac{1}{6}$]		fractions with the same denominator and denominators that are multiples of the same number • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
Decimals and Percentages		**Prior Learning**
Identify the value of each digit in numbers given to three decimal places	Spring 1	• Read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$] • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Round decimals with two decimal places to the nearest whole number and to one decimal place • Read, write, order and compare numbers with up to three decimal places • Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]	Spring 1	
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Spring 1	
Ratio and Proportion		**Prior Learning**
Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	Spring 1	
Solve problems involving the calculation/use of	Spring 1	

percentages for comparison		
Solve problems involving similar shapes where the scale factor is known or can be found	Spring 1	
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	Spring 1	
Algebra		**Prior Learning**
Use simple formulae	Spring 1	
Generate and describe linear number sequences	Spring 1	
Express missing number problems algebraically	Spring 1	
Find pairs of numbers that satisfy an equation with two unknowns	Spring 1	
Enumerate possibilities of combinations of two variables	Spring 1	
Measurement		**Prior Learning**
Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate	Autumn 2	• Convert between different units of metric measure • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 d.p.	Autumn 2	
Convert between miles and kilometres	Autumn 2	
Time		**Prior Learning**
Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa	Autumn 2	• Solve problems involving converting between units of time
Perimeter, area and volume		**Prior Learning**

Recognise that shapes with the same areas can have different perimeters and vice versa	Spring 2	• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • Estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water]
Recognise when it is possible to use formulae for area and volume of shapes	Spring 2	
Calculate the area of parallelograms and triangles	Spring 2	
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units	Spring 2	
Geometry		**Prior Learning**
Draw 2-D shapes using given dimensions and angles	Summer 1	• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • Use the properties of rectangles to deduce related facts and find missing lengths and angles • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
Compare and classify geometric shapes based on their properties and sizes	Summer 1	
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	Summer 1	
Recognise, describe and build simple 3-D shapes, including making nets	Summer 1	
Angles and Lines		**Prior Learning**
Find unknown angles in any triangles, quadrilaterals, and regular polygons	Summer 1	• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draw given angles, and measure them in degrees Identify: • angles at a point and one whole turn (total
Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	Summer 1	

		360°) • angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) • other multiples of 90°
Position and Direction		**Prior Learning**
Describe positions on the full coordinate grid (all four quadrants)	Summer 1	• Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Summer 1	
Statistics		**Prior Learning**
Interpret and construct pie charts and line graphs and use these to solve problems	Spring 2	• Complete, read and interpret information in tables, including timetables • Solve comparison, sum and difference problems usingi nformation presented in a line graph
Calculate and interpret the mean as an average	Spring 2	