	Croftlands Junior School Medium Term Maths planning
Year 5	**Autumn 1**
Place value to 1,000,000	● To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. ● To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
Mental addition and subtraction	● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Factors of numbers and prime numbers	● To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors. ● To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ● To establish whether a number up to 100 is prime and recall prime numbers up to 19.
Using multiplication and division facts	● To multiply and divide numbers mentally drawing upon known facts. ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Angles	● To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles
	● To draw given angles, and measure them in degrees (°).
	● To identify:
	    ● angles at a point and one whole turn (total 360°)
	    ● angles at a point on a straight line and 1/2 a turn (total 180°)
	    ● other multiples of 90°.

Length, perimeter and area	● To convert between different units of measure (for example, kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). ● To understand and use equivalences between metric units and common imperial units such as inches, pounds and pints. ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. ● To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. ● To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.

	Croftlands Junior School Medium Term Maths planning

Year 5	Autumn 2
Written methods for multiplication	● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Divide 4-digit numbers	● To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context. ● To multiply and divide numbers mentally drawing upon known facts. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Fractions and decimals: tenths and hundredths	● To compare and order fractions whose denominators are all multiples of the same number. ● To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. ● To read and write decimal numbers as fractions (for example, 0.71 = 71/100).
Decimals: tenths, hundredths, thousandths	● To read, write, order and compare numbers with up to three decimal places. ● To read and write decimal numbers as fractions (for example, 0.71 = 71/100). ● To round decimals with two decimal places to the nearest whole numbers and to one decimal place. ● To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents. ● To solve problems involving number up to three decimal places.
2D and 3D shapes	● To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ● To use the properties of rectangles to deduce related facts and find missing lengths and angles. ● To identify 3D shapes including cubes and cuboids from 2D representations.
Tables and bar charts	● To complete, read and interpret information in tables, including timetables.

	Croftlands Junior School Medium Term Maths planning
Year 5	**Spring 1**
Negative numbers, and solving problems involving numbers	● To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. ● To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. ● To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. ● To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000. ● To solve number problems and practical problems that involve all of the above.
Addition and subtraction of large numbers and money	● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ● To solve problems involving numbers up to three decimal places.
Long multiplication, square numbers and cube numbers	● To multiply and divide numbers mentally drawing upon known facts. ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}). ● To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.
Adding and subtracting fractions	● To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. ● To add and subtract fractions with the same denominator and multiples of the same number.
Reflections and translations	● To 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.
Mass	● To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). ● To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.

	Croftlands Junior School Medium Term Maths planning
Year 5	**Spring 2**
Addition and subtraction: mental and written methods for large numbers	● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Multiplication and division: written methods	● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context. ● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
Calculating with fractions	● To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. ● To add and subtract fractions with the same denominator and multiples of the same number. ● To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
Percentages	● To 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 hundred, and as a decimal fraction.
Capacity	● To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). ● To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. ● To estimate volume and capacity ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling
Line graphs/ comparative graphs	● To solve comparison, sum and difference problems using information presented in a line graph.

	Croftlands Junior School Medium Term Maths planning
Year 5	**Summer 1**
Negative numbers and Roman numerals	● To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. ● To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. ● To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000. ● To solve number problems and practical problems that involve all of the above. ● To read numerals to 1000 (M) and recognise years written in Roman numerals.
Adding and subtracting large and small numbers	● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ● To solve problems involving numbers up to three decimal places.
Long multiplication and division with remainders	● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context. ● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
Working with fractions	● To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. ● To add and subtract fractions with the same denominator and multiples of the same number.

Diagonals and problems involving angles	● To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles
	● To draw given angles, and measure them in degrees (°).
	● To identify:
	    ● angles at a point and one whole turn (total 360°)
	    ● angles at a point on a straight line and 1/2 a turn (total 180°)
	    ● other multiples of 90° .
	● To use the properties of a rectangle to deduce related facts and find missing lengths and angles.
	● To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Volume, time and money	● To estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water). ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling ● To solve problems involving converting between units of time.

	Croftlands Junior School Medium Term Maths planning
Year 5	**Summer 2**
Addition and subtraction of money	● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and division of money	● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To multiply and divide numbers mentally drawing upon known facts. ● To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. ● To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors. ● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
Decimals and fractions	● To read, write, order and compare numbers with up to three decimal places. ● To read and write decimal numbers as fractions (for example, 0.71 = 71/100). ● To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents. ● To round decimals with two decimal places to the nearest whole numbers and to one decimal place.
Problems involving percentages	● To 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 hundred, and as a decimal fraction. ● To solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 4/5 and those with a denominator of a multiple of 10 or 25.
Perimeter, area and scale drawing	● To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. ● To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Using tables, and line graphs	● To complete, read and interpret information in tables, including timetables. ● To solve comparison, sum and difference problems using information presented in a line graph.