Planning Guidance

- Ensure each lesson contains an element of counting, which is linked to other areas of your Maths curriculum. For example, counting in 25s using the measuring cylinder ITP; counting in 5 minutes on a clock to make an hour.
- Ensure each lesson has a taught mental starter to engage the pupils and to help coverage. For example working on prime numbers as a mental starter before a lesson on simplifying fractions. Sometimes the mental starter will be linked to the main, whereas other times it won't
- Every lesson should involve reasoning and problem solving, through both content and questioning techniques.

Week	Topic	Autumn Term Objectives Covered
1-2	**Place Value & Number**	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
3	**Mental Addition & Subtraction & Missing Angles**	• Add and subtract numbers mentally with increasingly large numbers • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Identify: ○ angles at a point and one whole turn (total 360°) ○ angles on a ½ turn (total 180°) ○ other multiples of 90° • Use the properties of rectangles to deduce related facts and find missing lengths and angles
4-5	**Written Addition & Subtraction**	• Add whole numbers with more than 4 digits, including using formal written methods (columnar addition) • Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
6	**Statistics**	• Solve comparison, sum and difference problems using information presented in a line graph • Complete, read and interpret information in tables, including timetables
7	**Mental Multiplication & Division**	• Multiply and divide numbers mentally drawing upon known facts • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})
8-9	**Written Multiplication**	• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

Week	Topic	Objectives Covered
	& Division	• Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling • 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 • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
10	**Perimeter & Area**	• 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 (cm2) and square metres (m2) and estimate the area of irregular shapes
11	**Problem Solving**	• [Finding all possibilities](#)
12-14	**Fractions & Decimals**	• 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, 2/5 + 4/5 = 6/5 = 1 and 1/5] • Compare and order fractions whose denominators are all multiples of the same number • 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, 2/5 + 4/5 = 6/5 = 1 and 1/5] • Add and subtract 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
15	**Angles (measuring / drawing)**	• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees ($^{\circ}$)
Week	**Topic**	**Spring Term** **Objectives Covered**
1-2	**Place Value & Number**	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
3-4	**Addition & Subtraction including: perimeter, charts, timetables and missing angles**	• Add whole numbers with more than 4 digits, including using formal written methods (columnar addition) • Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

Week	Topic	Objectives Covered
5-6	**Multiplication & Division including area**	• Multiply and divide numbers mentally drawing upon known facts • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • **Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers** • **Establish whether a number up to 100 is prime and recall prime numbers up to 19** • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling • 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 • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
7	**Problem Solving**	• Finding Rules
8-10	**Fractions, Decimals & Percentages**	• Read and write decimal numbers as fractions [for example, 0.71 = 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 • Solve problems involving number 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 ½ , ¼ , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
11-12	**Converting Units of Measurement**	• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • 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.
Week	**Topic**	**Summer Term** **Objectives Covered**
1	**Place Value & Number**	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals

2-3	**Addition & Subtraction including: perimeter, charts, timetables and missing angles**	• Add whole numbers with more than 4 digits, including using formal written methods (columnar addition) • Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
4-5	**Multiplication & Division including area**	• Multiply and divide numbers mentally drawing upon known facts • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • **Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers** • **Establish whether a number up to 100 is prime and recall prime numbers up to 19** • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling • 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 • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
6	**Measures Volume**	• Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
7	**Problem Solving**	• Logic Puzzles
8-10	**Fractions, Decimals & Percentages**	• 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, 2/5 + 4/5 = 6/5 = 1 and 1/5] • Compare and order fractions whose denominators are all multiples of the same number • 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, 2/5 + 4/5 = 6/5 = 1 and 1/5] • Add and subtract 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 • Read and write decimal numbers as fractions [for example, 0.71 = 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 • Solve problems involving number 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 ½ , ¼ , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
11	**Position & Direction**	•	Identify, describe and represent the position of a shape following a <u>translation</u>, using the appropriate language, and know that the shape has not changed
		•	Identify, describe and represent the position of a shape following a <u>reflection</u>, using the appropriate language, and know that the shape has not changed