Medium Term Maths Planning

Terms 1&2 **Class:**

EVERY DAY: Practise and develop oral and mental skills to promote mental fluency (e.g. counting, mental strategies, rapid recall of + , – , x and ÷ facts)

Week Date *(approx.days)*	**Programme of study** Strand and subheading	**Year 5 objectives**	**Year 6 objectives**
1	**Number and place value**	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 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero • 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 • read Roman numerals to 1000 (M) and recognise years written in Roman numerals	• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • Round any whole number to a required degree of accuracy • Use negative numbers in context, and calculate intervals across zero • Solve number and practical problems that involve all of the above
2	**Number** Mental calculation strategies **+/-/x/÷** *(teaching the strategies – please use 'Teaching Children to Calculate Mentally'.)*	• add and subtract numbers mentally with increasingly large numbers • multiply and divide numbers mentally drawing upon known facts • Pupils continue to practise mental methods • Solve problems using mental methods	• Perform mental calculations, including with mixed operations and large numbers • Pupils continue to practise mental methods • Solve problems using mental methods
3	**Number& measures** Multiplication	• 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	• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • Divide numbers up to 4 digits by a two-digit whole

	Division money	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 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.	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 • 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 • Solve problems involving multiplication and division
4	**Measures** Length area/perimeter conversion between units	• convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre • understand and use equivalences between metric units • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes • use all four operations to solve problems involving measure (e.g. length,) using decimal notation including scaling.	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places • Recognise that shapes with the same areas can have different perimeters and vice versa • Recognise when it is possible to use formulae for area and volume of shapes • Solve problems involving the above
5	**Geometry** Shape Properties of 3D shape/drawing 2D shapes with given angles	• identify 3-D shapes, including cubes and other cuboids, from 2-D representations • Solve problems involving the above	• Draw 2-D shapes using given dimensions and angles • Recognise, describe and build simple 3-D shapes, including making nets • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Solve problems involving the above •
6	**Statistics** Line graphs	• solve comparison, sum and difference problems using information presented in a line graph	Interpret and construct line graphs and use these to solve problems
Half term			

7	**Fractions/ Decimals/ Percentages**	• compare and order fractions whose denominators are all multiples of the same number • 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 (e.g. 2/5 + 4/5 = 6/5 = 11/5) • add and subtract fractions with the same denominator and multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • solve problem involving the above	• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions > 1 • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • Solve problems including those that which require answers to be rounded to specified degrees of accuracy .
8	**Fractions/ Decimals/ Percentages**	• read and write decimal numbers as fractions (e.g. 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 of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction • solve problems including those which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25. • solve problems involving the above	• Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places • Multiply one-digit numbers with up to two decimal places by whole numbers • Use written division methods in cases where the answer has up to two decimal places • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts • Solve problems including those that which require answers to be rounded to specified degrees of accuracy • solve problems involving the above
9	***Problem Solving***	*Teaching the skills and strategies of problem solving* *Could also be used for assessment purposes*	

10	**Measures** **Number** Capacity Conversion between units **+/-/x/÷**	• convert between different units of metric measure (e.g. litre and millilitre) • understand and use equivalences between metric units • use all four operations to solve problems involving measure (e.g. capacity,) using decimal notation including scaling.	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places • Recognise when it is possible to use formulae for volume of shapes
11	**Geometry** **Statistics** Angles Parts of circles Pie charts	• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (o) • identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and 1/2 a turn (total 180o) other multiples of 90o	• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • Interpret and construct pie charts and use these to solve problems
12	**Number** **Algebra** Multiplication Division Missing number problems	• 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) • solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors	• Identify common factors, common multiples and prime numbers • Use their knowledge of the order of operations to carry out calculations involving the four operations • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Solve problems involving multiplication and division