Year 5 Maths Curriculum

Week	Term 1	Term 2	Term 3
1	**Number and Place Value** Read, write, order and compare numbers to at least 10 000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to **10 000** *Pupils use multiplication and division as inverses to support the introduction of ratio in year 6 e.g. by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units: km & m* Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero Round any number up to 10 000 to the nearest 10, 100, 1000, 10 000 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. *Pupils identify the place value in*	**Number and Place Value** Read, write, order and compare numbers to at least 100 000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to **100 000** *Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units: km & m* Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero Round any number up to 100, 000 to the nearest 10, 100, 1000, 10 000 and 100,000 *Pupils identify the place value in large whole numbers.* *They continue to use number in context, including measurement. Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.*	**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 *Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units: km & m* 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 1 000 000 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. *Pupils identify the place value in*

2	*large whole numbers.* *They continue to use number in context, including measurement.* *Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.* *They should recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule.* *They should recognise and describe linear number sequences e.g. 3 31/2 4 41/2 (including those involving fractions and decimals, and find the term-to-term rule in words (for example, add ½)*	**Statistics** Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables, including timetables. *Pupils connect their work on coordinates and scales to their interpretation of time graphs. They begin to decide which representations of data are most appropriate and why.*	*large whole numbers.* *They continue to use number in context, including measurement.* *Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.* *They should recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule.* *They should recognise and describe linear number sequences e.g. 3 31/2 4 41/2 (including those involving fractions and decimals, and find the term-to-term rule in words (for example, add ½)*
3	**Addition** Add whole numbers with up to 4 digits, including using formal written methods (columnar addition) Add numbers mentally including numbers up to 4 digits Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy *Pupils practise using the formal written methods of columnar addition with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*	**Addition** Add whole numbers with more than 4 digits, including using formal written methods (columnar addition) Add numbers mentally including numbers up to 5 digits Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy *Pupils practise using the formal written methods of columnar addition with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*	**Addition** Add whole numbers with more than 4 digits, including using formal written methods (columnar addition) Add numbers mentally with increasingly large numbers Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy . *Pupils practise using the formal written methods of columnar addition with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*
4	**Subtraction** Subtract whole numbers with up to 4 digits, including using formal written methods (columnar subtraction) Subtract numbers mentally including numbers up to 4 digits Use rounding to check answers to calculations and determine, in	**Subtraction** Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) Subtract numbers mentally including numbers up to 5 digits Use rounding to check answers to calculations and determine, in	**Subtraction** Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) Subtract numbers mentally with increasingly large numbers Use rounding to check answers to calculations and determine, in

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	the context of a problem, levels of accuracy *Pupils practise using the formal written methods of columnar subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*	the context of a problem, levels of accuracy *Pupils practise using the formal written methods of columnar subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*	the context of a problem, levels of accuracy *Pupils practise using the formal written methods of columnar subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).* *They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).*
5	**Addition and Subtraction** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	**Addition and Subtraction** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	**Addition and Subtraction** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
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6	**Measurement – units** 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,] using decimal notation, including scaling. *Pupils use their knowledge of place value and multiplication and division to convert between standard units.*	**Measurement – money** Use all four operations to solve problems involving money using decimal notation, including scaling. *Pupils use their knowledge of place value and multiplication and division to convert between standard units.*	**Measurement – volume** Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] Use all four operations to solve problems involving measure [for example volume,] using decimal notation, including scaling. **Multiplication and division** Recognise and use cube numbers, and the notation for cubed (^{3}) *They understand the terms cube numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10).*
7	**Multiplication** **From Y4** Recall multiplication and division facts for multiplication tables up to 12 × 12 *Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency*	**Multiplication** **From Y4** Recall multiplication and division facts for multiplication tables up to 12 × 12 *Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency*	**Multiplication** **From Y4** Recall multiplication and division facts for multiplication tables up to 12 × 12 *Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency*

	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers *They understand the terms factor and multiple and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10).* Multiply 2, 3 and 4 digit numbers by one digit numbers using a formal written method,. *Pupils practise and extend their use of the formal written methods of short multiplication and short division (see Appendix 1).* Multiply numbers mentally drawing upon known facts Multiply whole numbers and those **involving decimals** by 10 *They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.*	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers *They understand the terms factor, and prime numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10).* Multiply numbers up to 2 digits by two-digit numbers using the grid method and a formal written method *Pupils practise and extend their use of the formal written methods of short multiplication and short division (see Appendix 1).* Multiply numbers mentally drawing upon known facts Multiply whole numbers and those involving decimals by 10, and **100** *They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.*	Establish whether a number up to 100 is prime and recall prime numbers up to 19 *They understand the terms prime, square and cube numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10).* Multiply numbers **up to 3 and 4** digits by a one- or two-digit number using the grid method and a formal written method, including long multiplication for two-digit numbers *Pupils practise and extend their use of the formal written methods of short multiplication and short division (see Appendix 1).* Multiply numbers mentally drawing upon known facts Multiply whole numbers and those involving decimals by 10, 100 and **1000** *They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.*
8	**Division** Divide numbers mentally drawing upon known facts Divide whole numbers and those involving **decimals** by **10** Divide numbers up to **2 digits** by a one-digit number using the number line and a formal written method of short division and interpret remainders appropriately for the context *Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, 98 ÷ 4 = 98/4 = 24 r 2 = 24 1/2 = 24.5 ≈ 25).*	**Division** Divide numbers mentally drawing upon known facts Divide whole numbers and those involving **decimals** by 10 and **100** Divide numbers up to **3 digits** by a one-digit number using the number line and a formal written method of short division and interpret remainders appropriately for the context *Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, 98 ÷ 4 = 98/4 = 24 r 2 = 24 1/2 = 24.5 ≈ 25).*	**Division** Divide numbers mentally drawing upon known facts Divide whole numbers and those involving **decimals** by 10, 100 and **1000** Divide numbers up to **4 digits** by a one-digit number using the number line and formal written method of short division and interpret remainders appropriately for the context *Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, 98 ÷ 4 = 98/4 = 24 r 2 = 24 1/2 = 24.5 ≈ 25).*

9	Multiplication and Division	Multiplication and Division	Multiplication and Division
	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign *Distributivity can be expressed as a(b + c) = ab + ac.* *Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x).*	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. *Distributivity can be expressed as a(b + c) = ab + ac.* *Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x).*	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes *Distributivity can be expressed as a(b + c) = ab + ac.* *Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x).*
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10	**Measurement – area and perimeter** 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 *Pupils calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. Missing measures questions such as these can be expressed algebraically, for example 4 + 2b = 20 for a rectangle of sides 2 cm and b cm and perimeter of 20cm.* *Pupils calculate the area from scale drawings using given measurements.* **Multiplication and division** Recognise and use square numbers and the notation for squared (^{2}) *They understand the terms prime, square and cube numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10).*	**Measurement – time** Solve problems involving converting between units of time *Pupils use all four operations in problems involving time including conversions (for example, days to weeks, expressing the answer as weeks and days).*	Fractions, **Decimals** and Percentages Read, write, order and compare numbers with up to three decimal places *Pupils extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line.* Round decimals with two decimal places to the nearest whole number and to one decimal place *Pupils say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.* Solve problems involving number up to three decimal places *Pupils should go beyond the measurement and money models of decimals, for example, by solving puzzles involving decimals*

11	**Fractions, Decimals & Percentages** Compare and order fractions whose denominators are all multiples of the same number *Pupils continue to practise counting forwards and backwards in simple fractions.* 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 1/5 Read and write decimal numbers as fractions [for example, 0.71 = 71/100] *Pupils say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.* Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents *They extend their knowledge of fractions to thousandths and connect to decimals and measures.*	**Fractions, Decimals & Percentages** Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths *Pupils connect equivalent fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions.* Add and subtract fractions with the same denominator and denominators that are multiples of the same number *They practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, 0.83 + 0.17 = 1).* *Pupils practise adding and subtracting fractions to become fluent through a variety of increasingly complex problems. They extend their understanding of adding and subtracting fractions to calculations that exceed 1 as a mixed number.* Solve problems which require knowing percentage and decimal equivalents of ½, ¼, and those fractions with a denominator of a multiple of 10. *Pupils continue to develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities.*	**Fractions, Decimals & Percentages** Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams *Pupils connect multiplication by a fraction to using fractions as operators (fractions of), and to division, building on work from previous years. This relates to scaling by simple fractions, including fractions > 1.* 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 *Pupils should make connections between percentages, fractions and decimals (for example, 100% represents a whole quantity and 1% is 1/100, 50% is 50/100, 25% is 25/100) and relate this to finding 'fractions of'.* *Pupils should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions.* 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**. *They mentally add and subtract tenths, and one-digit whole numbers and tenths.*
12	**Geometry- Properties of Shape** Identify 3-D shapes, including cubes and other cuboids, from 2-D representations Use the properties of rectangles to deduce related facts and find missing lengths and angles	**Geometry – position and direction** 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	**Geometry- Properties of Shape** Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (o) Identify:

		changed.	- angles at a point and one whole turn (total 360o)
	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. *Pupils become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles.* *Pupils use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools.*	*Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.*	- angles at a point on a straight line and 2 1 a turn (total 180o) other multiples of 90o *Pupils use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.* *Pupils become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles.*
13	**Assessment/Catch up week**	**Assessment/Catch up week**	**Assessment/Catch up week**