

# Year 5 Medium-Term Plans

<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>
<b>Number – Number and place value</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>• count forwards or backwards in steps of powers of 10 for any given number up to 1000000</li> <li>• round any number up to 1000000 to the nearest 10, 100 and 1000</li> </ul>	• Read and write numbers to 100 000 and determine the value of each digit	1
	• Order and compare numbers to 100 000 and determine the value of each digit	2
	• Count forwards and backwards in steps 10 and 100	3
	• Round numbers up to 100 000 to the nearest 10, 100 and 1000	4
<b>Number – Addition and subtraction</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	• Add numbers mentally	1
	• Subtract numbers mentally	2
	• Subtract numbers mentally	3
	• Solve addition and subtraction multi-step problems, deciding which operations and methods to use and why	4
<b>Geometry – Properties of shapes</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations</li> </ul>	• Identify 3-D shapes with parallel or perpendicular faces or edges	1
	• Use properties to identify 3-D shapes from 2-D representations	2
	• Visualise from the front, side and top 2-D representations of 3-D shapes made with interlocking cubes	3
	• Investigate and identify 3-D shapes which can be made using interlocking cubes	4

<b>Unit 2</b> <b>Number – Multiplication and division</b> <b>Number – Fractions</b> <b>Geometry – Position and direction</b>		
<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• multiply and divide whole numbers by 10, 100 and 1000</li> </ul>	• Multiply numbers mentally drawing upon known facts	1
	• Multiply whole numbers by 10, 100 and 1000	2
	• Multiply numbers mentally drawing upon known facts	3
	• Multiply and divide numbers mentally drawing upon known facts • Multiply whole numbers by 10 and 100	4
<b>Number – Fractions</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities *</li> <li>• practise counting forwards and backwards in simple fractions *</li> <li>• recognise and describe linear number sequences, including those involving fractions and find the term-to-term rule * [Domain: Number – Number and place value]</li> </ul>	• Find fractions of numbers and quantities using fractions as operators	1
	• Practise counting forwards and backwards in simple fractions	2
	• Identify, name and write equivalent fractions of a given fraction, represented visually	3
	• Compare and order fractions whose denominators are all multiples of the same number	4
<b>Geometry – Position and direction</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• identify, describe and represent the position of a shape following a translation, using the appropriate language, and know that the shape has not changed</li> </ul>	• Recognise where a shape will be after a translation on a 2-D grid and know that the shape has not changed	1
	• Translate two or more shapes to make a tiling pattern on a 2-D grid	2
	• Create 2-D shapes which following translations to the left/right and up/down form a tiling pattern	3
	• Identify, describe and represent the position of a shape following a translation in the first quadrant of a coordinate grid and know that the shape has not changed	4

\* Notes and guidance (non-statutory)

<b>Unit 3</b> <b>Number – Addition and subtraction</b> <b>Number – Decimals</b> <b>Measurement (mass)</b>		
<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>

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<b>Number – Addition and subtraction</b> <ul style="list-style-type: none"> <li>• add whole numbers with more than 4 digits, including using formal written methods (columnar addition)</li> <li>• add numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> </ul>	<b>Week 1</b>	
	• Add numbers mentally	1
	• Add whole numbers with five digits using the formal written method • Estimate and check the answer to a calculation	2
	• Add whole numbers with five digits using the formal written method • Estimate and check the answer to a calculation	3
	• Add whole numbers with five digits using the formal written method • Use rounding to check answers to calculations	4
<b>Number – Decimals</b> <ul style="list-style-type: none"> <li>• read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</li> <li>• round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>• practise adding decimals, including complements of 1 (for example, <math>0.83 + 0.17 = 1</math>) *</li> <li>• recognise and describe linear number sequences involving decimals, and find the term-to-term rule* [Domain: Number – Number and place value]</li> </ul>	<b>Week 2</b>	
	• Read and write decimal numbers as fractions	1
	• Round decimals with two decimal places to the nearest whole number • Add complements of 1	2
	• Round decimals with two decimal places to one decimal place	3
	• Recognise and describe linear number sequences involving decimals, and find the rule	4
<b>Measurement (mass)</b> <ul style="list-style-type: none"> <li>• convert between different units of metric measure (for example, gram and kilogram)</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as pounds</li> <li>• use all four operations to solve problems involving measure [for example, mass] using decimal notation, including scaling</li> </ul>	<b>Week 3</b>	
	• Use knowledge of place value, multiplication and division to convert between units of mass (gram and kilogram)	1
	• Know and use approximate equivalences between metric units of mass (kilograms and grams) and common imperial units (pounds)	2
	• Use all four operations to solve problems involving mass using decimal notation	3
	• Use all four operations to solve problems involving mass using decimal notation, including scaling	4

\* Notes and guidance (non-statutory)

# Year 5 Medium-Term Plans

<b>Unit 4</b> <b>Number – Multiplication and division</b> <b>Number – Multiplication and division</b> <b>Measurement (time)</b>		
<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• multiply numbers up to 4 digits by a one-digit number using a formal written method</li> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• multiply whole numbers by 10, 100 and 1000</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> <li>• solve problems involving multiplication and division including using their knowledge of squares and cubes</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Use the formal written method of short multiplication to calculate ThHTO x O</li> <li>• Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	4
<b>Number – Multiplication and division</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• divide numbers mentally drawing upon known facts</li> <li>• divide whole numbers by 10, 100 and 1000</li> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples</li> </ul>	<ul style="list-style-type: none"> <li>• Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• Establish whether a number up to 100 is prime and recall prime numbers up to 19</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Divide whole numbers by 10, 100 and 1000</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Divide numbers mentally drawing upon known facts</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve problems involving multiplication and division including using their knowledge of factors and multiples</li> </ul>	4
<b>Measurement (time)</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• solve problems involving converting between units of time</li> <li>• use all four operations to solve problems involving measure, including scaling</li> </ul>	<ul style="list-style-type: none"> <li>• Solve problems involving converting between units of time</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Solve problems involving converting between units of time to calculate durations of time</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Use all four operations in problems involving time, including conversions (for example, days to weeks, expressing the answer as weeks and days)</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Use all four operations to solve problems involving time, including scaling</li> </ul>	4

## Year 5 Mathematics Planning

Unit 5    Number – Number and place value Number – Addition and subtraction Geometry – Properties of shapes		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Number and place value	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• read, write, order and compare numbers to at least 1000000 and determine the value of each digit</li> <li>• count forwards or backwards in steps of powers of 10 for any given number up to 1000000</li> <li>• interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>• round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000</li> <li>• solve number problems and practical problems that involve all of the above</li> </ul>	<ul style="list-style-type: none"> <li>• Read, write, order and compare numbers up to 1 000 000 and determine the value of each digit</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Count forwards and backwards in steps of 10, 100 and 1000</li> <li>• Round any number up to 1 000 000 to the nearest 10, 100 and 1000</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Count backwards through zero with negative numbers</li> <li>• Interpret negative numbers in context</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve negative number problems</li> </ul>	4
Number – Addition and subtraction	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)</li> <li>• subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages)]</li> </ul>	<ul style="list-style-type: none"> <li>• Subtract numbers mentally</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Subtract whole numbers with five digits using the formal written method (decomposition)</li> <li>• Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Subtract whole numbers with five and six digits using the formal written method (decomposition)</li> <li>• Use rounding to check answers</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Add and subtract decimals to two decimal places using the formal written method</li> </ul>	4
Geometry – Properties of shapes	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees (°)</li> <li>• identify:               <ul style="list-style-type: none"> <li>- angles at a point and one whole turn (total 360°)</li> <li>- angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total 180°)</li> <li>- other multiples of 90°</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Know angles are measured in degrees: estimate, compare and measure with a protractor acute, obtuse and reflex angles</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Use a protractor to measure and draw angles to the nearest 5°</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Make accurate drawings of given angles, drawing lines with a ruler to the nearest millimetre and measuring angles to the nearest degree</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Identify angles at a point and one whole turn (total 360°), angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total 180°), other multiples of 90°</li> </ul>	4

\* Notes and guidance (non-statutory)

# Year 5 Medium-Term Plans

Unit 6 <b>Number – Multiplication and division</b> <b>Number – Fractions</b> <b>Measurement (length)</b>		
<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• 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</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate <math>HTO \div O</math></li> <li>• Estimate and check the answer to a calculation</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate <math>HTO \div O</math> with a fraction remainder</li> <li>• Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate <math>HTO \div O</math> with a decimal remainder</li> <li>• Estimate and check the answer to a calculation</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve division problems including answers that involve rounding remainders up or down</li> </ul>	4
<b>Number – Fractions</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>• recognise and use thousandths and relate them to tenths and hundredths</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise and use thousandths and relate them to tenths and hundredths</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Compare and order fractions whose denominators are all multiples of the same number</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Add fractions with the same denominator and denominators that are multiples of the same number</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Subtract fractions with the same denominator and denominators that are multiples of the same number</li> </ul>	4
<b>Measurement (length)</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre)</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches</li> <li>• use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling</li> </ul>	<ul style="list-style-type: none"> <li>• Use knowledge of place value, multiplication and division to convert between units of length (kilometre and metre; centimetre and metre; centimetre and millimetre)</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Know and use approximate equivalences between metric units of length (centimetres) and common imperial units (inches)</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Use all four operations to solve problems involving length using decimal notation</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Use all four operations to solve problems involving length using decimal notation, including scaling</li> </ul>	4

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Unit 7 <b>Number – Decimals</b> <b>Number – Addition and subtraction</b> <b>Statistics</b>		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
<b>Number – Percentages, decimals and fractions</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>read and write decimal numbers as fractions</li> <li>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>read, write, order and compare numbers with up to three decimal places</li> <li>solve problems involving number up to three decimal places</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> </ul>	1
	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers with up to three decimal places</li> </ul>	2
	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers with up to three decimal places</li> <li>Round decimals with two decimal places to the nearest whole number and to one decimal place</li> </ul>	3
	<ul style="list-style-type: none"> <li>Solve problems involving number up to three decimal places</li> </ul>	4
<b>Number – Addition and subtraction</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>mentally add and subtract tenths, and one-digit whole numbers and tenths *</li> <li>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, <math>0.83 + 0.17 = 1</math>]*</li> </ul> * [Domain: Number – Fractions (including decimals and percentages)]	<ul style="list-style-type: none"> <li>Add decimals with one and two decimal places mentally</li> </ul>	1
	<ul style="list-style-type: none"> <li>Subtract decimals with one and two decimal places mentally</li> </ul>	2
	<ul style="list-style-type: none"> <li>Add and subtract a mix of whole numbers and decimals</li> </ul>	3
	<ul style="list-style-type: none"> <li>Add and subtract decimals with different numbers of decimal places</li> </ul>	4
<b>Statistics</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>solve comparison, sum and difference problems using information presented in a line graph</li> <li>complete, read and interpret information in tables, including timetables</li> </ul>	<ul style="list-style-type: none"> <li>Solve comparison, sum and difference problems using information presented in a line graph</li> </ul>	1
	<ul style="list-style-type: none"> <li>Solve comparison, sum and difference problems using information presented in a line graph</li> </ul>	2
	<ul style="list-style-type: none"> <li>Complete, read and interpret information in tables, including timetables</li> </ul>	3
	<ul style="list-style-type: none"> <li>Connect work on coordinates and scales to interpreting information in time graphs</li> </ul>	4

Unit 8 <b>Number – Multiplication and division</b> <b>Number – Percentages (including fractions and decimals)</b> <b>Measurement (perimeter and area)</b>		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>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</li> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>	<ul style="list-style-type: none"> <li>Use partitioning to calculate <math>TO \times TO</math></li> <li>Estimate and check the answer to a calculation</li> </ul>	1
	<ul style="list-style-type: none"> <li>Use partitioning and the grid method to calculate <math>TO \times TO</math></li> <li>Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>Use the expanded written method of long multiplication to calculate <math>TO \times TO</math></li> <li>Estimate and check the answer to a calculation</li> </ul>	3
	<ul style="list-style-type: none"> <li>Solve problems involving addition, subtraction, multiplication and division</li> </ul>	4
<b>Number – Percentages (including fractions and decimals)</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>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</li> <li>solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 and 25</li> <li>make connections between percentages, fractions and decimals *</li> </ul>	<ul style="list-style-type: none"> <li>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'</li> <li>Write percentages as a fraction with a denominator of 100</li> </ul>	1
	<ul style="list-style-type: none"> <li>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'</li> <li>Write percentages as a decimal with two places</li> </ul>	2
	<ul style="list-style-type: none"> <li>Know percentage equivalents of certain fractions</li> </ul>	3
	<ul style="list-style-type: none"> <li>Solve problems involving percentages</li> </ul>	4
<b>Measurement (perimeter and area)</b>	<b>Week 3</b>	

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<ul style="list-style-type: none"> <li>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> </ul>	<ul style="list-style-type: none"> <li>Measure and calculate the perimeter <math>P</math> of composite rectilinear shapes in centimetres and metres, including using the rule <math>P = 2(a + b)</math> where <math>a</math> and <math>b</math> are the dimensions of the sides in the same unit</li> </ul>	1
	<ul style="list-style-type: none"> <li>Calculate and compare the area <math>A</math> of rectangles (including squares), using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>), and using the rule <math>A = a \times b</math>; and estimate the area of irregular shapes</li> </ul>	2
	<ul style="list-style-type: none"> <li>Use the relations of perimeter or area to find unknown lengths</li> </ul>	3
	<ul style="list-style-type: none"> <li>Calculate the area of irregular shapes formed from rectangles</li> </ul>	4

\* Notes and guidance (non-statutory)

Unit 9 Number – Number and place value Number – Addition and subtraction Geometry – Properties of shapes			
National Curriculum attainment targets	Lesson objectives	Lesson	
Pupils should be taught to:	Pupils will be taught to:		
<b>Number – Number and place value</b>	<b>Week 1</b>		
<ul style="list-style-type: none"> <li>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>count forwards or backwards in steps of powers of 10 for any given number up to 1000000</li> <li>round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000</li> <li>solve number problems and practical problems that involve all of the above</li> <li>read Roman numerals to 1000 (M) and recognise years written in Roman numerals</li> </ul>	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers to 1 000 000 and determine the value of each digit</li> </ul>	1	
	<ul style="list-style-type: none"> <li>Count forwards and backwards in steps of 100, 1000, 10000 and 100 000</li> <li>Round any number up to 1 000 000 to the nearest 10 000 and 100 000</li> </ul>		2
	<ul style="list-style-type: none"> <li>Solve number problems</li> </ul>		3
	<ul style="list-style-type: none"> <li>Read Roman numerals to 1000 (M)</li> <li>Recognise years written in Roman numerals</li> </ul>		4
<b>Number – Addition and subtraction</b>	<b>Week 2</b>		
<ul style="list-style-type: none"> <li>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages)]</li> <li>add and subtract numbers mentally with increasingly large numbers</li> <li>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract mentally whole numbers and decimals</li> </ul>	1	
	<ul style="list-style-type: none"> <li>Add whole numbers with five and six digits using the formal written method</li> <li>Use rounding to check answers to calculations</li> </ul>		2
	<ul style="list-style-type: none"> <li>Subtract whole numbers with five and six digits using the formal written method (decomposition)</li> <li>Use rounding to check answers to calculations</li> </ul>		3
	<ul style="list-style-type: none"> <li>Solve multi-step problems involving number and money, including some multiplication and division, deciding which operations to use and why</li> </ul>		4
<b>Geometry – Properties of shapes</b>	<b>Week 3</b>		
<ul style="list-style-type: none"> <li>use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li> <li>use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems *</li> <li>use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals*</li> <li>use conventional markings for parallel lines and right angles *</li> </ul>	<ul style="list-style-type: none"> <li>Use the properties of rectangles to deduce related facts and find missing lengths and angles</li> </ul>	1	
	<ul style="list-style-type: none"> <li>Use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals; use conventional markings for parallel lines and right angles</li> </ul>		2
	<ul style="list-style-type: none"> <li>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li> </ul>		3
	<ul style="list-style-type: none"> <li>Use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems</li> </ul>		4

\* Notes and guidance (non-statutory)

## Year 5 Mathematics Planning

<b>Unit 10</b> <b>Number – Multiplication and division, including Measurement (money)</b> <b>Number – Fractions</b> <b>Measurement (volume and capacity)</b>		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>multiply and divide numbers mentally drawing upon known facts</li> <li>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> <li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul>	<ul style="list-style-type: none"> <li>Use the most efficient method to calculate ThHTO x O and ThHTO ÷ O</li> <li>Estimate and check the answer to a calculation</li> </ul>	1
	<ul style="list-style-type: none"> <li>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> </ul>	2
	<ul style="list-style-type: none"> <li>Multiply numbers mentally drawing upon known facts</li> <li>Multiply TO x TO using factors</li> </ul>	3
	<ul style="list-style-type: none"> <li>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>Use all four operations to solve problems involving money using decimal notation, including scaling</li> </ul>	4
<b>Measurement (money)</b>		
<ul style="list-style-type: none"> <li>use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling</li> </ul>		
<b>Number – Fractions</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as a mixed number [for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>]</li> <li>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> <li>connect equivalent fractions &gt; 1 that simplify to integers with division and other fractions &gt; 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions *</li> </ul>	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>Write mathematical statements &gt; 1 as a mixed number</li> </ul>	1
	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>Connect fractions &gt; 1 that simplify to integers with division and other fractions &gt; 1 to division with remainders</li> </ul>	2
	<ul style="list-style-type: none"> <li>Multiply proper fractions by whole numbers</li> </ul>	3
	<ul style="list-style-type: none"> <li>Multiply mixed numbers by whole numbers</li> </ul>	4
<b>Measurement (volume and capacity)</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>convert between different units of metric measure (for example litre and millilitre)</li> <li>understand and use approximate equivalences between metric units and common imperial units such as pints</li> <li>estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]</li> <li>use all four operations to solve problems involving measure [for example volume] using decimal notation, including scaling</li> </ul>	<ul style="list-style-type: none"> <li>Use knowledge of place value, multiplication and division to convert between units of capacity (litre and millilitre)</li> </ul>	1
	<ul style="list-style-type: none"> <li>Know and use approximate equivalences between metric units of capacity (litres) and common imperial units (pints), and estimate capacity</li> </ul>	2
	<ul style="list-style-type: none"> <li>Estimate volume using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)</li> </ul>	3
	<ul style="list-style-type: none"> <li>Use all four operations to solve problems involving volume and capacity using decimal notation, including scaling</li> </ul>	4

\* Notes and guidance (non-statutory)



# Year 5 Medium-Term Plans

Unit 11 <b>Number – Addition and subtraction, including Measurement (money)</b> <b>Number – Percentages (including fractions and decimals)</b> <b>Geometry – Position and direction</b>		
<b>National Curriculum attainment targets</b> Pupils should be taught to:	<b>Lesson objectives</b> Pupils will be taught to:	<b>Lesson</b>
<b>Number – Addition and subtraction</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<ul style="list-style-type: none"> <li>• Add and subtract mentally whole numbers and decimals</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Add whole numbers with up to six digits using the formal written method</li> <li>• Use rounding to check answers to calculations</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Subtract whole numbers with up to six digits using the formal written method (decomposition)</li> <li>• Use rounding to check answers to calculations</li> </ul>	3
<b>Measurement (money)</b>		
<ul style="list-style-type: none"> <li>• use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling</li> </ul>	<ul style="list-style-type: none"> <li>• Solve multi step problems involving number and money, including some multiplication and division, deciding which operations to use and why</li> </ul>	4
<b>Number – Percentages (including fractions and decimals)</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• 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</li> <li>• solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math>, and those fractions fractions with a denominator of a multiple of 10 or 25</li> <li>• make connections between percentages, fractions and decimals *</li> </ul>	<ul style="list-style-type: none"> <li>• Know percentage and decimal equivalents of fractions</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Find percentages of amounts</li> <li>• Solve problems involving percentages</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Solve percentage problems</li> <li>• Solve problems involving percentages</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve problems involving percentages</li> </ul>	4
<b>Geometry – Position and direction</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• identify, describe and represent the position of a shape following a reflection, using the appropriate language, and know that the shape has not changed</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise and use reflection in a variety of diagrams, including continuing to use a 2-D grid</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Recognise where a shape will be after a reflection in given mirror lines and know that the shape has not changed</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Reflect a 2-D shape using coordinates in the first quadrant and lines that are parallel to the axes</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Identify, describe and represent the position of a shape following a reflection in two mirror lines at right angles and parallel to the axes in the first quadrant</li> </ul>	4

\* Notes and guidance (non-statutory)

## Year 5 Mathematics Planning

Unit 12 Number – Multiplication and division, including Measurement (money) Statistics		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
<b>Number – Multiplication and division</b>	<b>Week 1</b>	
<ul style="list-style-type: none"> <li>• multiply numbers up to 4 digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers</li> <li>• 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</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul>	<ul style="list-style-type: none"> <li>• Use partitioning to calculate HTO x TO</li> <li>• Estimate and check the answer to a calculation</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Use partitioning and the grid method to calculate HTO x TO</li> <li>• Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Use the expanded written method of long multiplication to calculate HTO x TO</li> <li>• Estimate and check the answer to a calculation</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Solve problems involving addition, subtraction, multiplication and division 4 and a combination of these, including understanding the meaning of the equals sign</li> <li>• Use all four operations to solve problems involving money using decimal notation, including scaling</li> </ul>	4
<b>Measurement (money)</b>	<b>Week 2</b>	
<ul style="list-style-type: none"> <li>• use all four operations to solve problems involving measure [for example money] using decimal notation, including scaling</li> </ul>	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate ThHTO ÷ O (decimal remainder)</li> <li>• Estimate and check the answer to a calculation</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate ThHTO ÷ O (fraction remainder)</li> <li>• Estimate and check the answer to a calculation</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Use the formal written method of short division to calculate ThHTO ÷ O (rounding remainders)</li> <li>• Estimate and check the answer to a calculation</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Use all four operations to solve problems involving money using decimal notation, including scaling</li> </ul>	4
<b>Statistics</b>	<b>Week 3</b>	
<ul style="list-style-type: none"> <li>• solve comparison, sum and difference problems using information presented in a line graph</li> <li>• complete, read and interpret information in tables</li> </ul>	<ul style="list-style-type: none"> <li>• Solve comparison, sum and difference problems using information presented in a line graph</li> </ul>	1
	<ul style="list-style-type: none"> <li>• Complete, read and interpret information in tables</li> </ul>	2
	<ul style="list-style-type: none"> <li>• Connect work on coordinates and scales to interpreting information in time graphs</li> </ul>	3
	<ul style="list-style-type: none"> <li>• Complete, read and interpret information in tables and begin to decide which representations of data are most appropriate and why</li> </ul>	4