

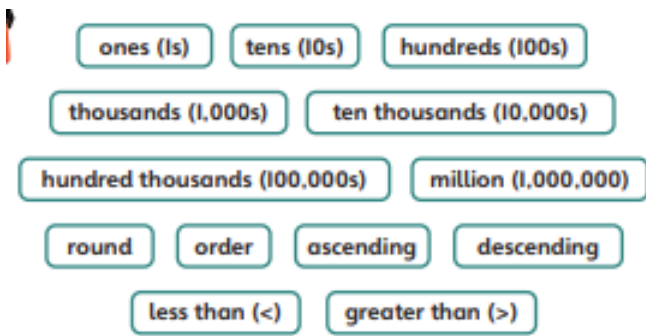
BILSTON CHURCH OF ENGLAND PRIMARY

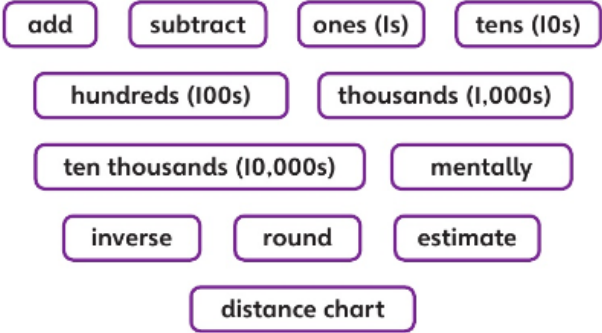


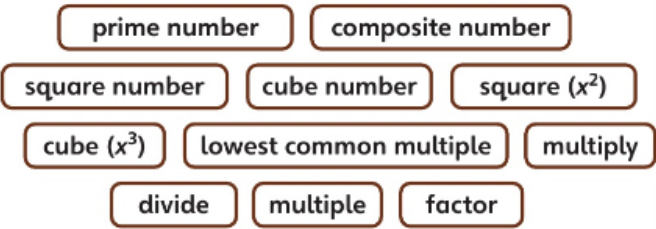
MEDIUM TERM PLANNING

Subject	Year Group	Term
Maths	5	Autumn

Topic	National Curriculum Objectives	Power Maths Unit	NCETM Professional development documents	Ready to Progress Criteria
Number and Place Value (Approximately 8 days)	<ul style="list-style-type: none"> Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit (10,000). 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, 1,000, 10,000 and 100,000 (10, 	<ul style="list-style-type: none"> Power Maths Unit 1 	<p>Spine 1</p> <p>1.26 composition and calculation multiples of 1,000 up to 1,000,000</p> <p>' ___ is less than ___, so ___ thousand is less than ___ thousand.'</p> <p>' ___ is greater than ___, so ___ thousand is greater than ___ thousand.'</p>	<ul style="list-style-type: none">

	<p>100 and 1,000).</p> <ul style="list-style-type: none"> • Solve number problems and practical problems that involve all of the above. • Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals 			
<p>Place value within 1,000,000 (approximately 6 days)</p>	<ul style="list-style-type: none"> • Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. • Solve number problems and practical problems that involve all of the above. • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000. • Interpret negative numbers in context, count forwards and 	<ul style="list-style-type: none"> • Power Maths unit 2 	<p>Spine 1</p> <ul style="list-style-type: none"> • 1.26 composition and calculation multiples of 1,000 up to 1,000,000 <p><i>' ___ is less than ___, so ___ thousand is less than ___ thousand.'</i></p> <p><i>' ___ is greater than ___, so ___ thousand is greater than ___ thousand.'</i></p> <ul style="list-style-type: none"> • 1.27 negative numbers: counting, comparing and calculating <p><i>'Negative numbers are below zero.'</i></p> <p><i>'Negative numbers are less than zero.'</i></p> <p><i>'Positive numbers are above zero.'</i></p> <p><i>'Positive numbers are greater than zero.'</i></p>	<ul style="list-style-type: none"> •

	<p>backwards with positive and negative whole numbers, including through zero</p> <ul style="list-style-type: none"> Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. Solve number problems and practical problems that involve all of the above. 			
<p>Addition and Subtraction (duration approximately 12 days)</p>	<ul style="list-style-type: none"> Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Add and subtract numbers 	<ul style="list-style-type: none"> Power Maths Unit 3 	<p>Spine 1</p> <p>1.28 common structures and the part-part-whole relationships</p> <p>1.29 using equivalence and the compensation property</p> <p><i>'I've added ___ to the minuend (subtrahend), so I need to add ___ to the subtrahend (minuend) to keep the difference the same.'</i></p> <p><i>'I've subtracted ___ from the minuend (subtrahend), so I need to subtract ___ from the subtrahend (minuend) to keep the difference the same.'</i></p> <p>to calculate</p>	<ul style="list-style-type: none">

	<p>mentally with increasingly large numbers</p> <ul style="list-style-type: none"> Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. 		<p>-</p> <p><i>'I've subtracted ___ from one addend, so I need to add ___ to the other addend to keep the sum the same.'</i></p> <p><i>'I've added ___ to one addend, so I need to subtract ___ from the other addend to keep the sum the same.'</i></p> <p>-</p> <p><i>'The sum has increased by ___; one addend has stayed the same, so the other addend must increase by ___.'</i></p> <p><i>'The sum has decreased by ___; one addend has stayed the same, so the other addend must decrease by ___.'</i></p>	
<p>Multiplication and Division</p> <p>Multiples (approximately 10 days)</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Power Maths Unit 4 	<p>Spine 2</p> <p>2.18 Using equivalence to calculate</p> <p><i>'If I multiply one factor by three, I must divide the other factor by three for the product to stay the same.'</i></p> <p><i>'If I multiply the dividend by ___, I must multiply the divisor by ___ for the quotient to stay the same.'</i></p> <p>2.19 Calculation: multiply and divide decimal fractions by whole numbers</p>	<ul style="list-style-type: none"> 5NF–1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). 5MD–1 Multiply and divide numbers by 10 and 100; understand

	<ul style="list-style-type: none"> • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) 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). • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.. 		<p><i>' ___ times ___ ones is equal to ___ ones, so ___ times ___ tenths is equal to ___ tenths.'</i></p> <p><i>' ___ is one-tenth the size of ___, so ___ times ___ is one-tenth the size of ___ times __.'</i></p> <p><i>' ___ is one-hundredth the size of ___, so ___ times ___ is one-hundredth the size of ___ times __.'</i></p> <p>2.20 Multiplication with three factors and volume</p> <p><i>'This layer has ___ rows of cubes.'</i></p> <p><i>'There are ___ 1 cm³ cubes in this layer.'</i></p> <p><i>'This layer has a volume of ___ cm³.'</i></p> <p><i>'There are ___ layers of ___ cm³.'</i></p> <p><i>'The volume of the cuboid is ___ cm³.'</i></p> <p>2.21 Factors, multiples, prime numbers and composite numbers</p>	<p>this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.</p> <ul style="list-style-type: none"> • 5MD–2 Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. • 5MD–3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. • 5MD–4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context. • 5G–2 Compare
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			<p>'There are ___ tiles. There are ___ rows and ___ columns. So ___ and ___ are factors of ___.'</p> <p>' ___ is a factor of ___ because ___ × ___ = ___.'</p> <p>' ___ is a multiple of ___ because ___ × ___ = ___.'</p> <p>' ___ is a factor of ___ because ___ ÷ ___ = ___.'</p> <p>' ___ is a multiple of ___ because ___ ÷ ___ = ___.'</p>	<p>areas and calculate the area of rectangles (including squares) using standard units.</p>
<p>Fractions (approximately 8 days)</p>	<ul style="list-style-type: none"> 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 (for example, $2\frac{5}{5} + 4\frac{5}{5} = 6\frac{5}{5} = 1\frac{1}{5}$). Compare and order 	<ul style="list-style-type: none"> Power Maths unit 5 <p>equivalent numerator denominator</p> <p>whole fraction improper fraction</p> <p>mixed number convert order</p> <p>greater than (>) less than (<) is equal to (=)</p>	<p>Spine 3</p> <p>3.7 finding equivalent fractions and simplifying fractions</p> <p>Repeat the stem sentence: <i>'The whole is divided into ___ equal parts and we have ___ of those parts.'</i></p> <p><i>'The numerator has been scaled up/down by ___.'</i></p> <p><i>'The denominator has been scaled up/down by ___.'</i></p> <p><i>'These fractions are/are not equivalent.'</i></p> <p>.....</p> <p>' $\frac{\square}{\square}$ is equivalent to $\frac{\square}{\square}$ '</p>	<ul style="list-style-type: none"> 5F-2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.

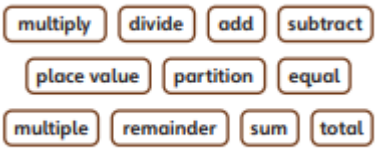
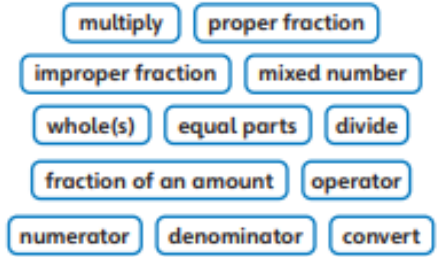
	fractions whose denominators are all multiples of the same number.			
Fractions (approximately 11 days)	<ul style="list-style-type: none"> Add and subtract fractions with the same denominator and denominators that are multiples of the same number Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, $2\frac{5}{5} + 4\frac{5}{5} = 6\frac{5}{5} = 11\frac{5}{5}$). 	<p>Power Maths unit 6</p>	<p>Spine 3</p> <p>3.8 Common denomination: more adding and subtracting</p> <p>from step 1:8 to support this: '<u> </u> and <u> </u> are related fractions because the denominator, "<u> </u>", is a multiple of the other denominator, "<u> </u>".'</p>	<ul style="list-style-type: none"> 5NPV-4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. 5F-1 Find non-unit fractions of quantities.

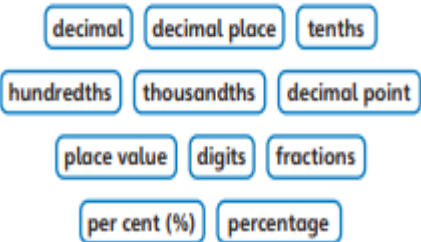


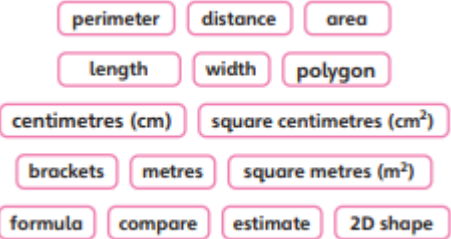
Subject	Year Group	Term
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Maths	5	Spring
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Topic	National Curriculum Objectives	Power Maths Unit	NCETM Professional development documents	Ready to Progress Criteria
Geometry Properties of Shapes (approximately 1 week)	<ul style="list-style-type: none"> • 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 at a point on a straight line and $1\ 2$ a turn (total 180°) - other multiples of 90°. • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. • Draw given angles, and measure them in degrees ($^\circ$). • Use the properties of rectangles to deduce related facts and find missing lengths and angles. • 	<ul style="list-style-type: none"> • Power Maths unit 13 <p>angle whole turn right angle</p> <p>acute angle obtuse angle reflex angle</p> <p>degrees ($^\circ$) interior angle</p> <p>clockwise anticlockwise orientation</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 5G-1 Compare angles, estimate and measure angles in degrees ($^\circ$) and draw angles of a given size.
Multiplication	<ul style="list-style-type: none"> • Multiply numbers up to 4 digits by a 	<ul style="list-style-type: none"> • Power Maths unit 7 	Spine 2	<ul style="list-style-type: none"> •

<p>And Division (approximately 10 days)</p>	<p>one or two-digit number using a formal written method, including long multiplication for two-digit numbers.</p> <ul style="list-style-type: none"> • Multiply and divide numbers mentally drawing upon known facts. • 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. 		<p>2.18 Using equivalence to calculate</p> <p><i>'If I multiply one factor by three, I must divide the other factor by three for the product to stay the same.'</i></p> <p><i>'If I multiply the dividend by ____, I must multiply the divisor by ____ for the quotient to stay the same.'</i></p> <p>2.22 Combining multiplication with addition and subtraction</p>	
<p>Fractions (approximately 8 days)</p>	<ul style="list-style-type: none"> • 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, $2\frac{5}{4} = 6\frac{5}{4} = 1\frac{1}{5}$). • Multiply proper fractions and mixed numbers by whole numbers, supported by 	<ul style="list-style-type: none"> • Power Maths unit 8 	<p>Spine 3</p> <ul style="list-style-type: none"> • 3.8 Common denomination: more adding and subtracting <p>____ are related fractions because the denominator, "____", is a multiple of the other denominator, "____".'</p> <p>eaten: 'The whole is divided into ____ equal parts, and we have eaten ____ of them.'</p>	<ul style="list-style-type: none"> •

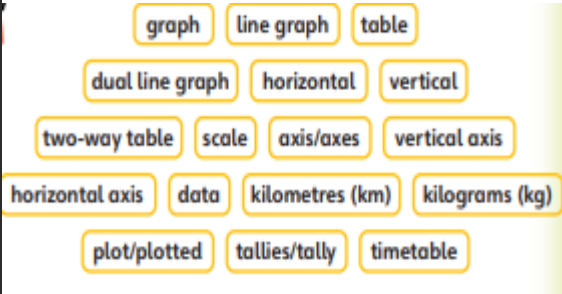
	<p>materials and diagrams</p> <ul style="list-style-type: none"> • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. 			
<p>Decimals and Percentages (approximately 15 days)</p>	<ul style="list-style-type: none"> • Read, write, order and compare numbers with up to three decimal places. • . Read and write decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$). • Round decimals with two decimal places to the nearest whole number and to one decimal place. • 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 	<ul style="list-style-type: none"> • Power Maths unit 9 		<ul style="list-style-type: none"> • 5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. • 5NPV-2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers

	<p>equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.</p>			<p>with up to 2 decimal places using standard and non-standard partitioning.</p> <ul style="list-style-type: none"> • 5NPV–3 Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. • 5F–3 Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.
<p>Measure Area and Perimeter (duration approximately 8 days)</p>	<ul style="list-style-type: none"> • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. • Calculate and compare the area of rectangles (including squares), and 	<ul style="list-style-type: none"> • Power Maths Unit 10 		<ul style="list-style-type: none"> •

	including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes.			
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Subject	Year Group	Term
Maths	5	Summer

Topic	National Curriculum Objectives	Power Maths Unit	NCETM Professional development documents	Ready to Progress Criteria
Graphs and tables (duration approximately 6 days)	<ul style="list-style-type: none"> Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph. 	<ul style="list-style-type: none"> Power Maths Unit 11 		
Decimals (approximately 2 weeks)	<ul style="list-style-type: none"> Solve problems involving number up to three decimal places. Read, write, order and compare numbers with up to three decimal places. Solve problems involving number up to three decimal places. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. 	<ul style="list-style-type: none"> Power Maths unit 12 <p>add subtract decimal tenths hundredths thousandths multiply divide decimal point whole column exchange place value decimal place digit</p>	<p>Spine 2</p> <p>2.19 Calculation: multiplication and division decimal fractions by whole numbers</p> <p>' ___ times ___ ones is equal to ___ ones, so ___ times ___ tenths is equal to ___ tenths.'</p> <p>' ___ is one-tenth the size of ___, so ___ times ___ is one-tenth the size of ___ times ___.'</p> <p>' ___ is one-hundredth the size of ___, so ___ times ___ is one-hundredth the size of ___ times ___.'</p>	

	<ul style="list-style-type: none"> • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. 			
			•	•
<p>Geometry Properties of Shapes (approximately 2 weeks)</p>	<ul style="list-style-type: none"> • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • Identify 3D shapes, including cubes and other cuboids, from 2D representations • 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°. • Use the properties of rectangles to deduce related facts and find missing lengths and angles. 	<ul style="list-style-type: none"> • Power Maths unit 14 <p>parallel perpendicular angle right angle interior angle quadrilateral view regular irregular 3D shape pyramid sphere cone hexagon pentagon triangle top view plan view side view</p>	•	•

<p>Geometry Position and Direction (approximately 1 week)</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Power Maths unit 15 reflection translation vertex vertices coordinates mirror line horizontal axis vertical axis 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
<p>Measure Converting units (approximately 8 days)</p>	<ul style="list-style-type: none"> Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling. Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal 	<ul style="list-style-type: none"> Power Maths unit 16 convert metric units imperial units kilo kilogram gram millimetre centimetre metre kilometre litre millilitre pound (lb) ounce (oz) inch (in) foot (ft) yard (yd) pint gallon stone (st) approximately timetable 	<ul style="list-style-type: none"> 	<p>5NPV-5 Convert between units of measure including using common decimals and fractions.</p>

	<p>notation, including scaling.</p> <ul style="list-style-type: none"> • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • Solve problems involving converting between units of time. • Complete, read and interpret information in tables, including timetables. 			
<p>Measure Volume and Capacity (approximately 1 week)</p>	<ul style="list-style-type: none"> • Estimate volume (for example, using 1 cm³ blocks to build cuboids (including cubes)) and capacity (for example, using water). 	<p>Power Maths Unit 17</p> <p>volume cube cuboid 3D shape</p> <p>solid capacity calculate</p> <p>estimate unit cubes</p> <p>least greatest</p>	<p>Spine 2</p> <p>2.20 Multiplication with three factors and volume</p> <p><i>'This layer has ___ rows of cubes.'</i></p> <p><i>'There are ___ 1 cm³ cubes in this layer.'</i></p> <p><i>'This layer has a volume of ___ cm³.'</i></p> <p><i>'There are ___ layers of ___ cm³.'</i></p> <p><i>'The volume of the cuboid is ___ cm³.'</i></p>	

