BILSTON CHURCH OF ENGLAND PRIMARY
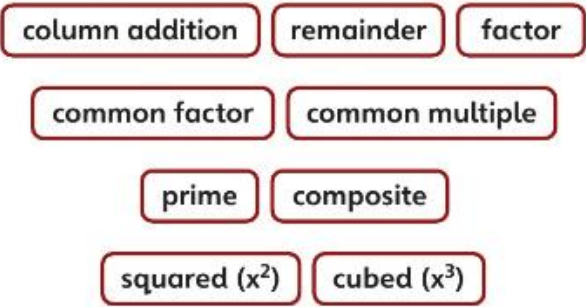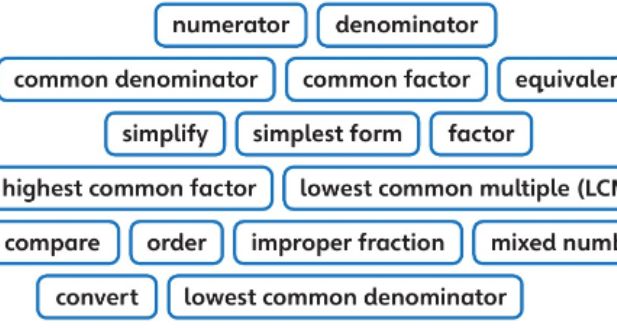
Subject	Year Group	Term
Maths	6	Autumn

Topic	National Curriculum Objectives	Power Maths Unit	NCETM Professional development documents	Ready to Progress Criteria
Number and Place Value (Approximately 8 days)	• Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. • Solve number and practical problems that involve all of the above. • Round any whole number to a required degree of accuracy. • Use negative numbers in context,	• Power Maths Unit 1 • ten thousands (10,000s) hundred thousands (100,000s) millions (1,000,000s) ten million (10,000,000) place value partition interval estimate compare order rounding negative positive	• Spine 1 1.30 composition and calculation: numbers up to 10,000,000 'The ___ represents ___.' 'The value of the ___ is ___.' 'a is between ___ and ___.' 'The previous multiple of one million is ___. The next multiple of one mil 'a is nearest to ___.' 'a is ___ when rounded to the nearest million.' '___ is between ___ and ___.' 'The previous multiple of one hundred thousand is ___. The next multiple of one h thousand is ___.' '___ is nearest to ___.' '___ is ___ when rounded to the nearest one hundred thousand.' Spine 2 2.29 Decimal place value knowledge, multiplication and division.	• 6NPV–1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). • 6NPV–2 Recognise the place value of

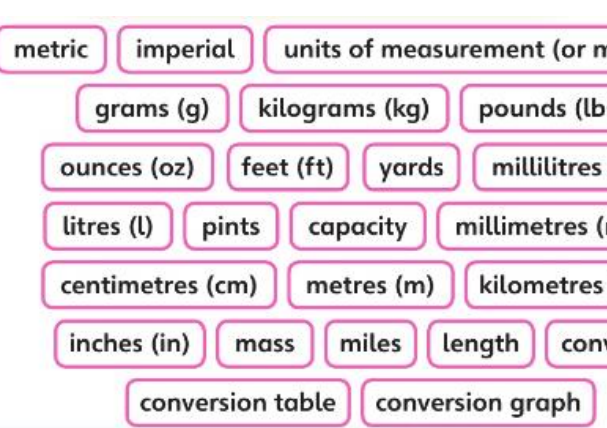|	and calculate intervals across zero.			each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.
				• 6NPV–3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.
				• 6NPV–4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals

				divided into 2, 4, 5 and 10 equal parts.
Number Four operations (Approximately 8 days)	• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. • Divide numbers	• Power Maths unit 2 column addition remainder factor common factor common multiple prime composite squared (x^2) cubed (x^3)	Spine 1 1.31.Problems with unknowns Spine 2 2.23 Multiplication strategies for larger numbers and long multiplication 2.24 Division: dividing by two digit divisors	•

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	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. • Divide numbers up to 4 digits by a two-digit whole 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.			
Number Four operations	• Identify common factors, common multiples	• Power Maths Unit 3	Spine 1 1.31.Problems with unknowns Spine 2	• 6AS/MD−1 Understand that 2 numbers can be related additively or

(Approximately 8 days)	and prime numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Perform mental calculations, including with mixed operations and large numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve problems involving addition, subtraction, multiplication and division.	factor short division long division column multiplication long multiplication order of operations brackets inverse operatic	2.23 Multiplication strategies for larger numbers and long multiplication 2.24 Division: dividing by two digit divisors	multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). • 6AS/MD−2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.

Fractions (Approximately 9 days)	• 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	• Power Maths Unit 4 numerator denominator common denominator common factor equivalen simplify simplest form factor highest common factor lowest common multiple (LCM compare order improper fraction mixed numb convert lowest common denominator	Spine 3 3.8 Common denomination: more adding and subtracting eaten: *'The whole is divided into ___ equal parts, and we have eaten ___ of them.'*	• 6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions. • 6F–2 Express fractions in a common denomination and use this to compare fractions that are similar in value. • 6F–3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy
Fractions (Approximately 9 days)	• Multiply simple pairs of proper fractions, writing the answer in its simplest	• Power Maths Unit 5	• Spine 3 • 3.9 Multiplying fractions and dividing fractions by a whole number.	• 6NPV–4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and

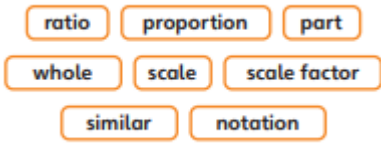|				
	form (for example, $1\frac{1}{4} \times 1\frac{1}{2} = 1\frac{1}{8}$). • Divide proper fractions by whole numbers (for example, $1\frac{1}{3} \div 2 = 1\frac{1}{6}$). • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Use written division methods in cases where the answer has up to two decimal places.	numerator denominator whole number mixed number convert simplify intege... improper fraction proper fraction	sentence: **'To divide a fraction by a whole number, we can change it to an equivalent multiplication. To divide by ___, we can multiply by ___.'** 3.10 Linking fractions, decimals and percentages • '___.___ is equivalent to $\frac{\square}{\square}$.' 'We know that $\frac{\square}{\square} < \frac{\square}{\square}$, so ___.___ < $\frac{\square}{\square}$.' or • '$\frac{\square}{\square}$ is equivalent to ___.___.' 'We know that ___.___ < ___.___, so ___.___ < $\frac{\square}{\square}$.'	10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.
Measure	• Use, read, write and convert between standard units,	• Power Maths unit 6	•	• 6NPV–4 Divide powers of 10, from 1 hundredth to 10

| Imperial and Metric measures

(Approximately 5 days)	converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Convert between miles and kilometres	metric, imperial, units of measurement (or me…, grams (g), kilograms (kg), pounds (lbs), ounces (oz), feet (ft), yards, millilitres (…, litres (l), pints, capacity, millimetres (m…, centimetres (cm), metres (m), kilometres (…, inches (in), mass, miles, length, conve…, conversion table, conversion graph		million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.

MEDIUM TERM PLANNING

Subject	Year Group	Term
Maths	6	Spring

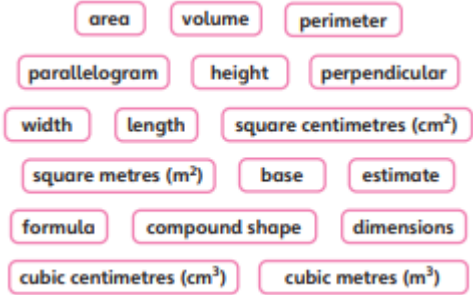| Topic	• National Curriculum Objectives	Power Maths Unit	• NCETM Professional development documents	• Ready to Progress Criteria
Geometry Property of Shapes (approximately 2 weeks)	• Draw 2D shapes using given dimensions and angles • Draw 2D shapes using given dimensions and angles. • Compare and classify geometric shapes based on their properties and sizes, and find unknown angles in any triangles, quadrilaterals and regular polygons. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and	• Power Maths unit 13 degree angle obtuse acute reflex right angle protractor triangle isosceles equilateral scalene regular polygon quadrilateral parallelogram kite rhombus trapezium diameter radius circumference concentric perimeter net pyramid tetrahedron cylinder prism vertically opposite angles cuboid cube	•	• 6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.

	find missing angles. • Illustrate and name parts of circles, including radius, diameter and circumference, and know that the diameter is twice the radius. • Recognise, describe and build simple 3D shapes, including making nets. •			
Ratio and Proportion (Approximately 9 days)	• Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. ● Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. • Solve problems involving similar shapes where the scale factor is known or can be found.	Power Maths Unit 7 ratio proportion part whole scale scale factor similar notation	Spine 2 • 2.27 Scale factors, ratio and proportional reasoning *'For every ___ ___ , there are ___ ___.'*	• 6AS/MD–3 Solve problems involving ratio relationships.

	• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates		
Algebra (Approximately 11 days)	• Use simple formulae. • Generate and describe linear number sequences. • Express missing number problems algebraically. • Enumerate possibilities of combinations of two variables. • Find pairs of numbers that satisfy an equation with two unknowns.	Power Maths unit 8 sequence rule term algebra expression calculation formula substitute generalise operation calculate equation solution		• 6AS/MD–4 Solve problems with 2 unknowns.
Decimals (Approximately 9 days)	• Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places.	Power Maths unit 9 multiply divide decimal decimal place (dp) recurring decimal placeholder place value tenths hundredths thousandths products fraction	•	• 6NPV–1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1

	• Associate a fraction with division and calculate decimal fraction equivalents (for example, 0·375) for a simple fraction (for example, 3 8). • Associate a fraction with division and calculate decimal fraction equivalents (for example, 0·375) for a simple fraction (for example, 3 8). • Use written division methods in cases where the answer has up to two decimal places. • Solve problems which require answers to be rounded to specified degrees of accuracy.			tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).
Percentages (Approximatel y 8 days)	• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	• Power Maths unit 10	•	•

- Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison.
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, 1 4 × 1 2 = 1 8).
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- Multiply one-digit numbers with up to two decimal places by whole numbers.
- Recall and use equivalences

per cent (%) percentage parts whole

decimal fraction divide share multiply

convert compare order equivalent fraction

simplify less than (<) greater than (>)

	between simple fractions, decimals and percentages, including in different contexts. • Solve problems which require answers to be rounded to specified degrees of accuracy. • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.			
Measure Perimeter Area and Volume (Approximatel y 11 days)	• 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. • Calculate the area of parallelogram s and triangles • Recognise that shapes with the same areas can have different perimeters and vice versa.	• Power Maths unit 11 area volume perimeter parallelogram height perpendicular width length square centimetres (cm²) square metres (m²) base estimate formula compound shape dimensions cubic centimetres (cm³) cubic metres (m³)	Spine 2 2.30 Multiplicative contexts: area and perimeter 2 'The base is ___.' 'The perpendicular height is ___.' 'The area is ___.' 'To change shape ___ into shape ___, scale the side-lengths by a scale factor of ___.'	• 6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.

	- Estimate volume (for example, using 1 cm3 blocks to build cuboids (including cubes)) and capacity (for example, using water). - Recognise when it is possible to use formulae for area and volume of shapes. - Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3).		
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MEDIUM TERM PLANNING

Subject	Year Group	Term
Maths	6	Summer

Topic	• National Curriculum Objectives	• Power Maths Unit	• NCETM Professional development documents	• Ready to Progress Criteria
Geometry Position and Direction	• Describe positions on the full coordinate grid (all four quadrants). • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	• Power Maths Unit 12 quadrant four quadrants translate translation x-axis y-axis axis axes horizontal vertical vertex reflect reflection •	•	•
Number Problem Solving (approximately 2 weeks)	• Solve number and practical problems that involve all of the above. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	• Power Maths unit 14 partition estimate round compare equivalent percentage ratio proportion convert common denominator coordinates translation reflection vertex scaling isosceles triangle	Spine 2 2.23 Multiplication strategies for larger numbers and long multiplication 2.24 Division: dividing by two digit divisors 2.28 Combining division with addition and subtraction	•

	- Solve problems involving addition, subtraction, multiplication and division. - Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. - Use their knowledge of the order of operations to carry out calculations involving the four operations. ● Solve problems involving addition, subtraction, multiplication and division. ● Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. - Recall and use equivalences between simple fractions, decimals and		

	percentages, including in different contexts • Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit,		

	and vice versa, using decimal notation to up to three decimal places • Describe positions on the full coordinate grid (all four quadrants). • Compare and classify geometric shapes based on their properties and sizes, and find unknown angles in any triangles, quadrilaterals and regular polygons. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.			
Statistics (approximately 1 week)	• Calculate and interpret the mean as an average. • Interpret and construct pie charts and line graphs and use these to solve problems. • Use estimation to check answers to calculations and determine, in the context of a problem, an	• Power Maths unit 15 mean average pie chart segment line graph bar chart percentage fraction data	Spine 2 2.26 Mean average and equal shares *'The ___ represents the ___.'* *'The dividend is___.'* *'The divisor is ___ because ___.'* *'The mean is ___ ÷ ___ = ___.'*	• 6NPV–4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.

	appropriate degree of accuracy. • Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison. •		