



Barrowby CE Primary School

Maths Curriculum

The Maths Curriculum for Year 5

Autumn Term 1									
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6			
Unit	Place Value and Rounding of Larger Numbers	Interpret Negative Numbers	Place Value of Numbers with up to Three Decimal Places	Multiply and Divide by 10, 100 and 1000	Properties of Number—Multiples, Factors and Common Factors and Prime and Composite Numbers		Multiple and Divide Mentally, Solve Problems Involving Knowledge of Key Facts		
	By the end of this unit children will be able to: <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 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Interpret negative numbers in context, count forwards and backwards 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Read, write, order and compare numbers with up to 3 decimal places 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19 		By the end of this unit children will be able to: <ul style="list-style-type: none"> • Multiply and divide numbers mentally drawing upon known facts • Solve number and practical problems that involve place value • Solve problems using knowledge of factors and multiples 		
Suggested support for children with additional needs	<ul style="list-style-type: none"> • Place value counters and place value sliders to represent 4-digit numbers. • Modelling using the part-whole model • Rounding mountains as a visual representation 	<ul style="list-style-type: none"> • Make links to negative numbers in real life contexts such as temperature. • Negative number lines available. 	<ul style="list-style-type: none"> • Place value sliders available to develop the concept of number value • Scaffold and model place value of number to aid making comparisons. 	<ul style="list-style-type: none"> • Use of place value sliders • Pre-teaching the concept of divide and multiply by ten linking to times tables • Use of place value counters to make links to number value 	<ul style="list-style-type: none"> • Times table grids available for identifying multiples 	<ul style="list-style-type: none"> • Display vocabulary and refer to it throughout to aid pupil understanding 	<ul style="list-style-type: none"> • Multiplication grids available • Place value sliders • Scaffold layout of formal written method in books • Pre-teach to remind of previously taught strategies 		
Step	LS1	LS2	LS3	LS4	LS5	LS6	LS7	LS8	
1	Value of digits within large numbers	Counting forwards and backwards across zero	Recognising and comparing tenths and hundredths	Multiplying by 10, 100 and 1000	Identifying multiples	Identifying what makes a number prime	Revisit strategies for recalling	Working backwards	

							known facts	
2	Number magnitude and conservation of a million	Reading scales involving negative numbers	Comparing numbers with up to 2 decimal places	Multiplying by 10, 100 and 1000 (including decimals)	Comparing multiples and factors	Prime or composite ?	Use known multiplication facts to derive others	Find a starting point
3	Comparing numbers	Application in context	Read, write and compare numbers with up to 3 decimal places	Dividing by 10, 100 and 1000 (including decimals)	Identifying all factors of a number	Building composite numbers from prime factors	Doubling and halving to use known facts	
4	Ordering numbers		Ordering numbers with up to 3 decimal places	Multiplying and dividing by 10, 100 and 1000	Identifying common factors		Divisibility rules	
5	Counting in steps of powers of 10		Rounding decimals (2 decimal places to the nearest whole number and to 1 decimal place)				Regrouping to support division	
6	Rounding numbers						Select an appropriate strategy for mental multiplication or division	

The Maths Curriculum for Year 5

Autumn Term 2							
	Week 1	Week 2	Week 3	Week 4	Week 5		Week 6
Unit	Add and Subtract Using a Range of Strategies	Add and Subtract Using Formal Written Methods	Formal Written Method for Multiplication	Formal Written Method of Short Division	Equivalent Fractions and Compare and Order Fractions		Adding and Subtracting Fractions
	By the end of this unit children will be able to: <ul style="list-style-type: none"> Add and subtract numbers mentally with increasingly large numbers 	By the end of this unit children will be able to: <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) 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Read, write, order and compare numbers with up to 3 decimal places 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	By the end of this unit children will be able to: <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 		By the end of this unit children will be able to: <ul style="list-style-type: none"> Add and subtract fractions with the same denominator and multiples of the same number
Suggested support for children with additional needs	<ul style="list-style-type: none"> Scaffolded layout of column addition and subtraction method in books Use place value counters to model regrouping and exchanging for 10 etc 	<ul style="list-style-type: none"> Counters to model regrouping Scaffolded layout of column addition and subtraction method in books 	<ul style="list-style-type: none"> Multiplication grids available / visual times tables in the classroom Use of part whole model to break down calculations through partitioning Use of apparatus such as dines to support partitioning 2 and 3-digit numbers 	<ul style="list-style-type: none"> Scaffold layout of formal written method in books Use of part whole model to break down calculations through partitioning Use of apparatus such as dines to support partitioning 2 and 3-digit numbers 	<ul style="list-style-type: none"> Use bar models and foam fractions to aid comparisons of fraction sizes Model mathematical number statements to aid retention. 		<ul style="list-style-type: none"> Use bar models and foam fractions to aid comparisons of fraction sizes Model mathematical number statements to aid retention.
Step	LS9	LS10	LS11	LS12	LS13	LS14	LS15
1	Using rounding for estimation	Using rounding for estimation	Revision of short written method for a 2 or 3-digit number by a 1-digit number extending to a 4-digit number by a 1-digit number	Division as sharing	Identify and name fractions	Compare fractions to 12	Add and subtract fractions with the same denominator
2	Using place value to add and subtract	Column addition	Using grid method and expanded vertical	Sharing and grouping	Recognise and create	Compare fractions	Add and subtract fractions whose

			method to solve a 2-digit number by a 2-digit number multiplication		equivalent fractions	using visual representations	denominators are all multiples of the same number
3	Regrouping to add and subtract	Column subtraction	Long multiplication of a 2-digit number by a 2-digit number	Short division for numbers up to 4-digits	Improper fractions and mixed numbers	Identify equivalent fractions where denominators are all multiples of the same number	Add and subtract fractions >1 whose denominators are all multiples of the same number
4	Using equal sum for addition	Reasoning about column addition and subtraction	Long multiplication of a 3-digit number by a 2-digit number	Expressing quotients with fractions	Convert improper fractions to mixed numbers	Compare fractions whose denominators are all multiples of the same number	Application of adding and subtracting fractions
5	Using equal difference for subtraction		Rehearsal of short and long multiplication	Expressing quotients with decimals	Application of mixed numbers and improper fractions	Order fractions whose denominators are all multiples of the same number	
6	Selecting an appropriate strategy			Interpreting remainders	Equivalence of tenths and hundredths	Order fractions whose denominators are all multiples of the same number where simplification can be used	

7					Match equivalent fractions in a range of contexts	Order fractions of amounts	
---	--	--	--	--	---	----------------------------	--

The Maths Curriculum for Year 5

Spring Term 1						
	Week 1	Week 2		Week 3	Week 4	Week 5
Unit	Problem Solving—All Four Operations	Multiply Fractions by Whole Numbers		Measure— Converting Units of Measure	Area	Volume and Capacity
	By the end of this unit children will be able to: <ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams This sequence applies the previous NC statements from 5LS13, 5LS14, 5LS15 and 5LS17 to ensure that pupils can combine and use this knowledge to solve problems. 		By the end of this unit children will be able to: <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) Solve problems involving converting between units of time 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Calculate and compare the area of rectangles (including squares) using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Estimate volume [for example, using 1cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]
Suggested support for children with additional needs	<ul style="list-style-type: none"> Pictorial representation of the bar model Multi-sensory approach including concrete apparatus such as cubes 	<ul style="list-style-type: none"> Use of fraction bars to represent equivalent fractions visually Fraction walls for pictorial representations 		<ul style="list-style-type: none"> Concrete apparatus to make learning relevant e.g. capacity beakers and measuring equipment such as tape reassures and rulers. 	<ul style="list-style-type: none"> Use tactile equipment for work relating to shape, space and measures rather than visual information e.g. 2D and 3D shapes. 	<ul style="list-style-type: none"> Concrete apparatus to make learning relevant e.g. capacity beakers and measuring equipment such as tape reassures and rulers. Recap of formulae for finding area and volume. Provide a formulae prompt sheet to aid retention of strategies.
Step	LS16	LS17	LS18	LS19	LS20	LS21
1	Drawing a model to support reasoning	Multiply unit fractions by a whole number where the answer is <1	Combining learning about fractions to solve a problem	Decimal and fraction equivalences of metric measure	Develop strategies to estimate the area of irregular shapes	Square numbers and area
2	Interpreting statistical information	Multiply fractions by whole numbers where the answer is >1	Using bar modelling to represent a problem involving fractions	Converting from a larger unit to a smaller unit	Estimate area using standard units	Build cube numbers
3	Working backwards as a strategy	Evaluate the effectiveness of representations to solve problems		Converting a from a smaller unit to a larger unit	Calculate and compare the area of rectangles	Investigate the volume of cuboids

4	Select an appropriate strategy to solve a problem	Multiply mixed numbers by whole numbers		Mixed conversion practice	Find unknown measures when calculating area	Estimating volume and capacity
5	Apply an appropriate strategy to solve a problem	Multiply fractions by whole numbers in a range of contexts		Scaling measures	Work backwards to calculate measures from a given area	

The Maths Curriculum for Year 5

Spring Term 2							
	Week 1	Week 2	Week 3	Week 4	Week 5		
Unit	Percentages	Problem Solving— Percentages	3-D Shapes from 2-D Representations	Perimeter and Estimate, Compare, Measure and Draw Angles	Identify Unknown Angles		
	By the end of this unit children will be able to: <ul style="list-style-type: none"> 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 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those with a denominator of a multiple of 10 or 25 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Identify 3-D shapes, including cubes and other cuboids, from 2-D representations 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 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees ($^{\circ}$) 	By the end of this unit children will be able to: <ul style="list-style-type: none"> Identify: <ul style="list-style-type: none"> 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° 		
Suggested support for children with additional needs	<ul style="list-style-type: none"> Build on pupils’ preferred learning styles when explaining mathematical concepts. Reinforce understanding of the meaning of the word ‘percent’ to help aid retention. 	<ul style="list-style-type: none"> Use foam fraction / decimal / percentage resource to support finding and understanding equivalences 	<ul style="list-style-type: none"> Access to 2D and 3D shapes of different sizes. Larger ones will support children with poor motor skills Use mirrors to support identifying symmetry. Modelling of symmetrical shapes 	<ul style="list-style-type: none"> Visual prompts Support with drawing lines and angles to support fine motor skills. Ensure children have access to a variety of shape apparatus 	<ul style="list-style-type: none"> Visual prompts Support with drawing lines and angles to support fine motor skills. Ensure children have access to a variety of shape apparatus Scaffold and list multiples of 9 / 90 to aid finding angles around a turn 		
Step	LS22	LS23	LS24	LS25	LS26	LS27	LS28

1	Understand that per cent relates to the number of parts per hundred	Convert between fractions, decimals and percentages	Define cuboids and cubes	Translate shapes	Calculate the perimeter of rectilinear figures (rectangles and squares)	Recap of prior learning including right angles and turns	Angles in a right angle and on a straight line
2	Express parts per hundred as fractions, decimals and percentages	Draw a model to calculate a percentage	Understand nets	Reflect patterns and shapes	Calculate the perimeter of composite rectilinear shapes	Name, compare and order acute, obtuse, reflex and right angles	Angles around a point or whole turn
3	Use scaling to identify percentages	Draw a model to calculate the whole	Draw nets using given measurements	Translate and reflect in the first quadrant	Solve problems using knowledge of perimeter and area	Measure angles accurately with a protractor	
4	Identify common equivalent fractions, decimals and percentages	Solve a range of percentage problems				Estimate angles in degrees and check by measuring	
5	Calculate percentages by finding fractions of					Draw angles	
6	Develop strategies to calculate percentages						

The Maths Curriculum for Year 5

Summer Term 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Unit	Formal Methods for Division and Multiplication in Increasingly Complex Problems.	Strategies for Multiplication and Division (Mental and Written)	Solving Problems involving Scaling by Simple Fractions and Rates	Conversion of Imperial and Metric Units of Measure	Fractions, Decimals and Percentages Problem Solving	Reading Timetables and Calculating with Time
	<p>By the end of this unit children will be able to:</p> <ul style="list-style-type: none"> • Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • Divide numbers up to 4 digits by one-digit numbers using the formal written method of short division and interpret remainders appropriately for the context 	<p>By the end of this unit children will be able to:</p> <ul style="list-style-type: none"> • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<p>By the end of this unit children will be able to:</p> <ul style="list-style-type: none"> • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling 	<p>By the end of this unit children will be able to:</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 • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling 	<p>By the end of this unit children will be able to:</p> <ul style="list-style-type: none"> • Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25 • Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 	<p>By the end of this unit children will be able to:</p> <ul style="list-style-type: none"> • Complete, read and interpret information in tables, including timetables
Suggested support for children with additional needs	<ul style="list-style-type: none"> • Make learning relevant and link to real life contexts for children modelling how maths is used in day to day life. • Scaffold layout of formal written method in books 	<ul style="list-style-type: none"> • Place value counters to model sharing given numbers equally into different sized groups • Provide a template to structure calculations 	<ul style="list-style-type: none"> • Concrete apparatus to represent ratio practically and provide a visual to aid understanding. • Break down ratio problems into smaller chunks to aid understanding of scaling 	<ul style="list-style-type: none"> • Concrete apparatus to make learning relevant e.g. capacity beakers and measuring equipment such as tape reassures and rulers. • Recap of formulae for finding area and volume. • Provide a formulae prompt sheet to aid retention of strategies. 	<ul style="list-style-type: none"> • Pre-teach concepts to children • Provide a multiplication grid to aid calculations. • Use of the bar model to represent calculations visually and support understanding equivalents 	<ul style="list-style-type: none"> • Ensure tables and data are displayed at a large size to support reading information. • Encourage children to use other apparatus such as a ruler to read information on a table with increased accuracy.
Step	LS29	LS30	LS31	LS32	LS33	LS34

1	Interpreting remainders	Revisiting and deepening understanding of remainders	Model scaling and correspondence problems	Metric conversion	Revising proportions and scaling	Exploring what we know about telling the time and converting units of time
2	Creating word problems involving different division contexts	Solving missing number division problems	Scaling by simple fractions:	Metric scale drawings	Problem solving using scales	Reading and interpreting timetables
3	Applying formal multiplication to solve problems	Multiplication and division – developing strategy discussion and operational sense	Scaling by simple rates	Imperial units of measure – pints	Comparing proportions represented differently	Completing missing information in timetables
4			Scale drawings	Imperial units of measure – inches	Solving multi-step problems	Solving problems involving completing and reading timetables and calculating with time
5				Imperial units of measure – pounds		

The Maths Curriculum for Year 5

Summer Term 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Unit	Solve Problems involving the Four Operations	Distinguish between Regular and Irregular Polygons	Use Properties of Rectangles	Statistics– Solve Comparison, Sum and Difference Problems using Information in a Line Graph	Statistics—Interpreting and Evaluating Information Presented in Charts and Tables	Roman Numerals
	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Use the properties of rectangles to deduce related facts and find missing lengths and angles 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Solve comparison, sum and difference problems using information presented in a line graph 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Begin to decide which representations of data are most appropriate and why (non-statutory) 	By the end of this unit children will be able to: <ul style="list-style-type: none"> • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
Suggested support for children with additional needs	<ul style="list-style-type: none"> • Multiplication grids available for children to recognise factor pairs • Use of bar model • Recap / pre-teach previously taught strategies and make links to previous learning using children’s exercise books. 	<ul style="list-style-type: none"> • Use tactile equipment for work relating to shape, space and measures rather than visual information e.g. 2D and 3D shapes. • Pre-teach to recap shape knowledge from previous years. • Ensure children have access to a variety of shape apparatus 	<ul style="list-style-type: none"> • Ensure children have access to a variety of shape apparatus • Use tactile equipment for work relating to shape, space and measures rather than visual information e.g. 2D and 3D shapes. • Prompts and reminders of any relevant formulae. 	<ul style="list-style-type: none"> • Link application to real life contexts to make learning relevant. • Provide a pre-drawn graph for data to be populated on • Explore the different forms of mathematical representation and discuss how data collected in a table can be transferred to a bar chart / line graph to display the information differently. • Open ended questioning about the collected data. 	<ul style="list-style-type: none"> • Ensure tables and data are displayed at a large size to support reading information. • Encourage children to use other apparatus such as a ruler to read information on a table with increased accuracy. 	<ul style="list-style-type: none"> • Scaffold with visual prompts of Roman Numerals to refer to, daily links to roman numeral dates written in books.
Step	LS35	LS36	LS37	LS38	LS39	LS40
1	Exploring confusing language – dangers of	Classify polygons as regular or irregular	Step 1: Calculating missing lengths in rectangles and shapes or	Use data to make comparisons and	Compare representations of data in text and tables	Read and write Roman numerals to 1000

	trigger words and distractors		patterns including rectangles	calculate sum or difference		
2	Focus on structure – translating language into a mathematical model	Revisit 2-D shape vocabulary including regular and irregular	Using knowledge of rectangles and angles to calculate missing angles	Use information in a line graph to compare and calculate	Choose appropriate data representations	Recognising times and years involving Roman numerals
3	What could the question be?	Construct regular polygons, including using a protractor		Solve problems using information in line graphs	Evaluate different data representations	Investigating and using Roman numerals in problems
4	Revisiting working backwards					