



## Purpose of Study

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

## Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.



# Girlington Primary School Mathematics Curriculum

Year 1

Term	Autumn 1			Autumn 2			Spring 1				Spring 2			Summer 1				Summer 2		
Concept	Place Value	Shape	Add Subtract	Place Value	Add Subtract	Shape and Time	Place Value	Add Subtract	Shape and Time	Fractions	Place Value	Add Subtract	Shape	Place Value	Multiplication and division	Fractions	Shape and Time			
<b>Prior EYFS Learning</b>	Count beyond 20. Children will link number symbols with its cardinal value up to 10. Children will compare numbers and give reasons. Children will understand the '1 more' less for consecutive numbers.	Children will explore the composition of numbers up to 10. Children will recall number bonds for numbers up to 5, including subtraction facts. Children will be able to recall number facts for doubling and halving.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will compose and decompose shapes so that they recognise a shape can have other shapes within it.	Children will use language to compare objects e.g. bigger and smaller. Children will compare length weight and capacity. Children will begin to use units to compare things.	Children will explore the composition of numbers up to 10. Children will recall number bonds for numbers up to 5, including subtraction facts. Children will be able to recall number facts for doubling and halving.	Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.	Count beyond 20. Children will link number symbols with its cardinal value up to 10. Children will compare numbers and give reasons. Children will understand the '1 more' less for consecutive numbers.	Children will explore the composition of numbers up to 10. Children will recall number bonds for numbers up to 5, including subtraction facts. Children will be able to recall number facts for doubling and halving.	Children will be able to recall number facts for halving. ELG: Explore and represent patterns within numbers up to ten, including even, odds, double facts and how quantities can be distributed equally.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.	Count beyond 20. Children will link number symbols with its cardinal value up to 10. Children will compare numbers and give reasons. Children will understand the '1 more' less for consecutive numbers.	Children will explore the composition of numbers up to 10. Children will recall number bonds for numbers up to 5, including subtraction facts. Children will be able to recall number facts for doubling and halving.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.	Count beyond 20. Children will link number symbols with its cardinal value up to 10. Children will compare numbers and give reasons. Children will understand the '1 more' less for consecutive numbers.	Children will be able to recall number facts for doubling halving. ELG: Explore and represent patterns within numbers up to ten, including even, odds, double facts and how quantities can be distributed equally.	Children will explore the composition of numbers up to 10. Children will recall number bonds for numbers up to 5, including subtraction facts. Children will be able to recall number facts for doubling and halving.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.	Count beyond 20. Children will link number symbols with its cardinal value up to 10. Children will compare numbers and give reasons. Children will understand the '1 more' less for consecutive numbers.	Children will be able to talk about and explore 2D and 3D shapes using informal and mathematical language. Children will begin to use time to sequence events. Children will begin to develop a sense of time through experiencing time specific durations.
<b>Prior Vocab</b>	forward backward more less number line equal to more than less than fewer taller smaller small longer shorter heavier lighter	rectangle square triangle circle cube cuboid pyramid sphere cone sides corners straight same length curved pointy longer shorter point flat face edge surface	add subtract plus altogether equals total left number sentence left	long(er) short(er) tall double half heavy(er) light(er) full empty	before after next first today tomorrow yesterday quicker slower	Day of the week Yesterday Today Tomorrow	half equal parts whole equal	forward backward more less number line equal to more than less than fewer taller smaller number	Money Pound Penny P Pence coin	Forward Backward Up Down Next to On top Behind In front of Position	Half Double Share Equal Fair Unfair Group Pairs	Whole Half Part Equal Position	Half Time Half past Big hand Little hand o'clock							

## National Curriculum Subject Content


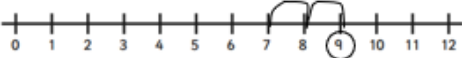

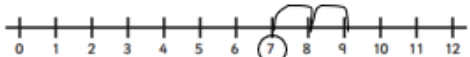





Curriculum Objectives	Count to and across 30. Read numbers from 1 to 20 in numeral and words. Write and spell numbers 1 to 5 in words. Identify and represent numbers using objects, pictures. Count, read and write numbers to 30 in numerals. Order numbers by size and begin to use the language of equal to, more than, less than, fewer, most, least, 1 more and 1 less than a given number. Compare and describe Lengths and heights.	Recognise 2D shapes in resource s, pictures and the environment. Describe the properties of 2D shapes. Make 2D shapes from resource s such as matchsticks.	Use part-whole models to show addition. Read, write and interpret mathematical statements involving +, - and =. Add and subtract 1-digit numbers. Solve 1 step problem that involve addition and subtraction on using resource s and pictures.	Count to 50. Revise previous objective s in place value. Represent numbers to 20 using 10 frames. Order numbers using vocabulary such as greatest, smallest, most and least. Compare and describe and solve practical problem for: Lengths and heights Mass/weight Capacity and volume Measure lengths with non-standard units.	Revise and consolidate objective s already taught. Represent addition problems with a bar model. Solve addition word problems . Represent and solve subtraction problems .	Identify and describe basic 3D shapes. Recognise and use language relating to dates, including days of the week, weeks, months and years.	Count in tens. Revise and consolidate objectives already taught. Write and spell numbers 1 to 20 in words. Represent 2-digit numbers using dienes blocks and other base 10 representations. Identify and represent numbers on number-lines. Measure and begin to record: lengths and heights mass/weight capacity and volume	Revise and consolidate objective s already taught. Add by counting on a populated number-line, putting the largest number first.	Revise identifying 2D and 3D shapes. Tell the time to the hour and draw hands on the clock to show this. Sequence events in chronological order using language. Recognise and use language relating to dates, including days of the week, weeks, months and years	Recognise, find and name half of an object, shape or quantity	Count to 100. Count in tens. Revise and consolidate to place value objective s. Use dienes blocks to represent numbers up to 100. Use ordinal numbers.	Revise and consolidate objective s already taught. Use positional language to describe the movement of an object. Recognise the value of coins and notes. Work out the total value of a selection of coins. Choose the correct coins to make a given amount. Subtract 1-digit numbers and 2-digit numbers to 20 by counting back.	Count across 100. Revise and consolidate objective s already taught. Use multiple representations of numbers to explore the place value of 2-digit numbers.	Solve 1-step problems involving multiplication and division by calculating the answer using objects, pictures and arrays.	Revise halves. Recognise, find and name a quarter of an object, shape or quantity. Describe position, direction and movement including whole, half, quarter and three-quarter turns.	Revise telling the time to the hour. Tell the time to the half hour. Measure and begin to record time.	<b>Addition and Subtraction</b> Look at family of facts. Solve missing number e.g. 7= ?- 9. Use Afl to decide what needs to be recapped and consolidated.		
<b>Revise</b>	forward backward more less number line equal to more than less than fewer taller smaller small longer shorter heavier lighter	rectangle square triangle circle cube cuboid pyramid sphere cone sides corners straight same length curved pointy longer shorter point flat face edge surface	add subtract plus altogether equals total left number sentence left	long(er) short(er) tall double half heavy(er) light(er) full empty	add subtract plus altogether equals total left number sentence left left over word problems	before after next first today tomorrow yesterday quicker slower	number line count on count back largest smallest	day of the week in order yesterday today tomorrow	half equal parts whole equal	forward backward more less number line equal to more than less than fewer taller smaller words tens numbers to 100 multiple of 10	money pound penny p pence coin	forward backward up down next to on top behind in front of position	across 100 represent	half double share equal fair unfair group pairs	whole half part equal position	half time half past big hand little hand o'clock			
<b>New</b>	least most words 1 more 1 less Compare biggest tallest smallest longest shortest greater greatest larger largest more	oval pentagon hexagon equal length opposite 3D 2D	left over word problems combine	half quarter full heaviest lightest nearly full nearly empty almost full almost empty	earlier later quickest slowest hours seconds minutes long time short time next week last week next month last month next year last year month names	tens ones count in tens represent weight height	hour o'clock big hand little hand hour hand minute hand	fraction equal pieces amount have	number bonds note worth value	right left in between	place value 100 hundreds	times multiply arrays pair couple lots of	quarter quarter turn direction movement	hour half hour	quarter full				

## Year 1

Term	Autumn 1			Autumn 2			Spring 1				Spring 2			Summer 1				Summer 2
Concept	Place Value	Add and Subtract	Shape	Place Value	Add and Subtract	Shape and Time	Place Value	Add and Subtract	Fractions	Shape and Time	Place Value	Add and Subtract	Shape	Place Value	Multiplication and division	Fractions	Shape and Time	

### National Curriculum Subject Content

Learn by Heart	1 more to 30 2D shapes	1 less to 30 Count in twos	3D shapes Count in tens	Count in fives. Pairs that make 10.	1 more to 100 Recognise and name coins and notes.	Revise pairs to 10. Subtraction facts for pairs to 10. 1 less to 100.
Arithmetic	1 less than 1 more than Adding and subtracting 1-digit numbers		Adding and subtracting 1-digit numbers. Complements to 10. Doubles and halves.		Adding and subtracting numbers below 20. Complements to 10 – missing numbers. Doubles and halves.	
Problem Solving	Act it out Draw a picture					

Calculations Policy	<b>Addition</b>	Physical resources/Drawing Put the biggest number in your head. Put the smallest number up on your fingers. Count on from the biggest number.				
		Part/Whole Models 		Populated Numberline 7+2 		
		$7 + 5 = 12$ 				
	<b>Subtraction</b>	Physical resources/Drawing Put the biggest number in your head. Put the smallest number up on your fingers. Count back from the biggest number.				
		Populated numberline 9-2 		$7 - 5 = 2$ 		
	<b>Multiplying</b>	$3 \times 2$ 		<b>Multiplying</b> $3 \times 2 = 6$ Count on fingers 		
	<b>Finding fractions of amounts - halving</b>	$\frac{1}{2}$ of 6 		<b>Finding fractions of amounts - quartering</b> $\frac{1}{4}$ of 8 		


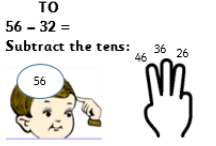
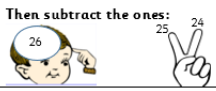
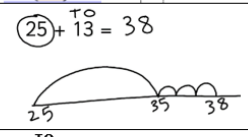
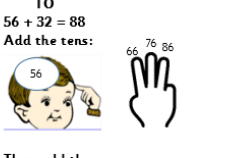

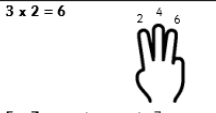
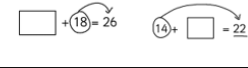
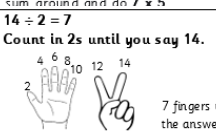
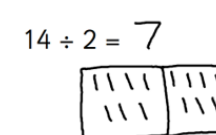
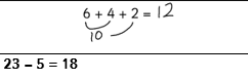
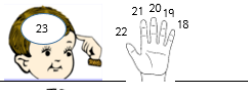
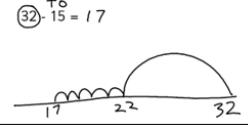
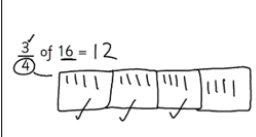


# Girlington Primary School Mathematics Curriculum

Year 2

Term	Autumn 1				Autumn 2				Spring 1				Spring 2				Summer 1				Summer 2			
Concept	Addition and subtraction	Multiplication and Division	Place Value	Fractions	Place Value	Addition and Subtraction	Multiplication and Division	Shape	Place value	Addition and subtraction	Multiplication and division	Fractions	Place Value	Addition and subtraction	Multiplication and division	Fractions	Place Value	Addition and subtraction	Multiplication and division	Shape and time	Place Value	Addition and Subtraction	Multiplication and division with fractions	
<b>National Curriculum Subject Content</b>																								
<b>Objectives</b>	Recall and use addition facts to 10 and 20.	Count in 2s and 5s. 2- and 5- times table.	Read and write numbers to 100 in numerals and words.	Recognise and find 1/2 of shapes and lengths and quantities.	Revises the place value of digits in a 2-digit number.	Derive pairs to 100 from pairs to 10 and use these to solve problems.	Understand and dividing.	Identify and describe properties of 2D shapes including the number of sides.	Choose and use appropriate units to measure using a variety of measuring equipment.	Adding and subtracting on a blank number line.	Count in 3s.	Find any number of quarters of a shape or number.	Odd and even numbers.	Revise adding and subtracting on a blank number line and apply this skill to word problems.	Solve multiplication word problems using arrays, counting in multiples, bar models or times table knowledge.	Solve problems involving halves, any number of quarters and any number of thirds of a shape or number.	Revise and consolidate place value knowledge.	Add and subtract money including problems involving change.	Interpret, construct and answer questions about pictograms and tally charts.	Understand and use rotation (half, quarter, three quarter and full turns; clockwise and anti-clockwise).	Count in 2s, 5s, 10s and 100s.	Revise, consolidate and extend previous addition and subtraction objectives.	Revise previous multiplication and fraction knowledge.	Use ALL to decide which objectives should be revised and consolidate.
	Add and use numbers using concrete objects and by counting on supported by using fingers.	Understand multiplication and solve problems using arrays.	Use dienes to make a given number.	Recognise and find 1/2 of shapes and lengths, set of objects and quantities.	Partition numbers including into number sentences e.g. 72 = 70 + 2	Show that addition is commutative by drawing arrays.	Solve multiplication problems by drawing arrays.	Describe the symmetry of 2D shapes.	Estimate, measure, draw and order lengths, weights and capacity.	Solving problems involving change from a pound.	Solve multiplication and division problems.	Use the digit cards to make an odd number which is greater than 20.	Use the most appropriate subtraction method for the question.	Choose the correct operation for a mixture of multiplication and division problems.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.	Understand and generate families of facts for multiplication and division sentences.
<b>Vocabulary</b>	addition	multiplication	numeral	half	place value	total	equal	2D	equal	quarters	quarters	halves	halves	halves	halves	halves	halves	halves	halves	halves	halves	halves	halves	
	subtract	divide	digit	quarter	value	total	equal	3D	gross	quarters	quarters	halves	halves	halves	halves	halves	halves	halves	halves	halves	halves	halves		
<b>New</b>	lens	repeated	place value	quantity	partition	change	divide	symmetry	ruler	dark	thirds	odd	mental	partition	pictogram	rotation	accurately	mental	pictogram	rotation	accurately	mental		
	ones	addition	estimate	equivalent	order	graph	share	line	measuring	number	quarter	even	method	lens	tally	clockwise	scales	method	tally	clockwise	scales	method		

Term	Autumn 1				Autumn 2				Spring 1				Spring 2				Summer 1				Summer 2			
Concept	Addition and subtraction	Multiplication and Division	Place Value	Fractions	Place Value	Addition and Subtraction	Multiplication and Division	Shape	Place Value	Addition and subtraction	Multiplication and division	Fractions	Place Value	Addition and subtraction	Multiplication and division	Fractions Shape	Place Value	Addition and subtraction	Multiplication and division	Shape and time	Place Value	Addition and Subtraction	Multiplication and division with fractions	
<b>National Curriculum Subject Content</b>																								
Learn By Heart	Pairs to 10 and 20 2x table 5x table				10x tables Counting in 4s.				Counting in 3s Doubling up to 24, and doubling multiples of ten.				10 more and 10 less. Halving up to 24 and halving multiples of ten.				2x table and division facts 5x table and division facts				10x table and division facts. Spelling names of days and months. Spelling numbers up to 20.			
Arithmetic	Head and fingers adding and subtracting. Missing box questions in addition problems. Multiplication within known times tables. Introduction to the + symbol and division by drawing dots on bar models.				Adding 3 1-digit numbers. Questions with the = sign in a different position e.g. $\square = 4+9$ . Multiplication within known times tables or by drawing arrays. Division by drawing or counting in 2s, 5s and 10s. Using a populated number-line to add and subtract, including making big jumps of 10.				Find $\frac{1}{2}$ of a number. Adding and subtracting on a blank number-line.				Consolidate blank number-line for adding and subtracting. Find any number of quarters or thirds of an amount. Missing box questions for subtraction.				Mentally adding and subtracting two 2-digit numbers by counting in tens and ones. Consolidate and practise missing box questions.				Explore a variety of mental methods for adding and subtracting.			
Problem Solving	Act it out				Act it out				Draw a diagram Make a list or table (new strategy)				Draw a diagram Make a list or table (new strategy)				Draw a diagram Make a list or table (new strategy)				Draw a diagram Make a list or table (new strategy)			

<b>Calculations</b>	<b>Adding 1 digit numbers mentally</b>	Put the biggest number in your head. Put the smallest number up on your fingers. Count on from the biggest number.	$23 + 5 = 28$ 	<b>Subtracting TO - TO mentally</b>	Put the biggest number in your head. Put T and O on the other number. Look at the tens in the other number and put up that many fingers. Then look at the ones number and put up that many fingers. Count back in ones.	<b>TO</b> $56 - 32 =$ Subtract the tens:  Then subtract the ones: 
	<b>Adding TO + TO using a blank number line</b>	Circle the biggest number and put T and O on the other number. Write the biggest number at the start of the number line. Draw the Ten jumps and the One jumps. Write the numbers you land on for the ten jumps. Write your answer at the end.	$25 + 13 = 38$ 	<b>Missing numbers in subtraction</b>	If the biggest number is missing, add the other two numbers.  If the middle number is missing, do a subtraction with the other numbers.	$\square - 15 = 8$ $15 + 8 = 23$  $35 - \square = 7$ $35 - 7 = 28$
	<b>Adding TO + TO mentally</b>	Put the biggest number in your head. Put T and O on the other number. Look at the tens in the other number and put up that many fingers. Count on in tens. Then look at the ones number and put up that many fingers. Count on in ones.	<b>TO</b> $56 + 32 = 88$ Add the tens:  Then add the ones: 	<b>Multiplying 2, 3, 4, 5 and 10 x tables.</b>	The first number tells you how many fingers to put up. The second number tells you what to count in. If you don't know how to count in the second number, remember you can swap the numbers round.	$3 \times 2 = 6$  $5 \times 7 \rightarrow$ can't count in 7s $\rightarrow$ swap the sum around and do $7 \times 5$
	<b>Missing numbers in addition</b>	Count from the smallest number to the biggest number.	$\square + 18 = 26$ $14 + \square = 22$ 	<b>Dividing 2, 3, 4, 5 and 10 x tables</b>	The first number tells you what you need to count to. The second number tells you what to count in. Count in that times table until you reach the first number. Look at your fingers - this is the answer. <b>OR</b> The second number tells you how many boxes to draw in your bar model. The first number is how many you need to give out. Share out the number and then see how many is in each section.	$14 \div 2 = 7$ Count in 2s until you say 14.  7 fingers up so the answer is 7  $14 \div 2 = 7$ 
	<b>Adding 3 numbers</b>	Choose two numbers to add first. Then add the last number.	$6 + 4 + 2 = 12$ 	<b>Subtracting 1 digit numbers mentally</b>	Put the biggest number in your head. Put the smallest number up on your fingers. Count back from the biggest number.	$23 - 5 = 18$ 
	<b>Subtracting TO + TO using a blank number line</b>	Circle the biggest number and write T and O on the other number. Write the biggest number at the end of the number line. Draw the Ten jumps and the One jumps. Write the numbers you land on for the Ten jumps. Write your answer at the end.	$32 - 15 = 17$ 	<b>Finding fractions of amounts</b>	The bottom number of the fraction is how many boxes you need in your bar model. The big number tells you how many you need to share out. Share out the number equally. The top number of the fraction tells you how many boxes you need to tick. Count how many you have drawn altogether in all of the boxes you have ticked.	$\frac{3}{4}$ of 16 = 12 



# Girlington Primary School Mathematics Curriculum

## Year 3

Term	Autumn 1				Autumn 2				Spring 1			Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Fractions	Shape	Addition and subtraction	multiply and divide	Fractions	Shape	Addition and Subtraction	Fractions	Time	Addition and Subtraction	Multiplication and Division	Time	Addition and Subtraction	Fractions	Recap and apply.
<b>National Curriculum Subject Content</b>																	
Objectives	Read and write numbers up to 1000. Count in 10s, 100s, 50s starting at 0. Representing numbers in different ways. Recognise the value of a digit. Partitioning numbers. Estimate the position and write numbers on a number line. Compare numbers to 1000. 100 more or less than a number.	Use varied representations to add and subtract. Use a number-line to support mental adding – 3-digit and 1-digit, crossing 10. Add and subtract multiples of 10. Subtract a 1-digit number or a multiple of 10 from a 3-digit number, crossing 1/100.	Recognise, find and write fractions. Recognise and use fractions as numbers. Add and subtract fractions with the same denominator.	Understand what angles are. Identify right angles and explore their relationship to half turns and full turns. Compare angles to a right angle and say whether they are bigger or smaller.	Use the inverse to check answers. Solve problems including more complex addition and subtraction. Add and subtract money, including to find change.	Use arrays to represent multiplication problems. Match number sentences to the correct picture. Multiplying by multiples of 10 using visual representations. Introduce and use the grid method.	Counting in tenths. Understanding tenths. Revise adding fractions with the same denominators.	Draw and identify 2D shapes. Make 3D shapes using modelling materials. Describe 3D shapes. Recognise 3D shapes in different orientations.	Introduce column addition, first without regrouping then with. Apply to problems. Introduce column subtraction, first without exchange then with. Solve a mixture of addition and subtraction problems. Measure, add and subtract lengths. Measure the perimeter of a 2D shape. Solve problems involving perimeter.	Revise previous fractions learning. Compare and order unit fractions and fractions with the same denominator.	Tell the time from an analogue clock. Use 12- and 24-hour clock. Know the number of seconds in a minute, the number of days in each month, a year and a leap year. Record and compare times.	Understand find the difference, and difference questions such as how many more. Model with cuisinaire rods and unifix. Interpret and present data using bar charts, pictograms and tables. Solve one step and two step questions using information in bar graphs, pictograms and tables.	Revise previous multiplication and division learning. Solve problems involving scaling and correspondence problems.	Read Roman numerals to 12. Revise time objectives. Calculate the duration of events using a vertical number-line. Compare the durations of events.	Estimate the answer to calculations. Measure, compare, add and subtract mass and capacity.	Revise all previous fractions knowledge. Recognise and show equivalent fractions with diagrams. Solve problems involving fractions.	Use AftL to decide what needs to be recapped and consolidated.
Vocabulary	Revise	smaller larger greater less more	add subtract	fraction half quarter denominator numerator	turn half turn right angle greater smaller	money change pounds pennies	arrays rows columns multiples of 10 grid method	sides corners vertices edges faces triangle rhombus	cm m ruler tape measure metre stick	compare order bigger larger smaller less more equal	evening morning second minute hour	bar chart pictogram table	groups of share split		measuring jug scales heavier lighter	equivalent fraction numerator denominator	
	New	digit	multiples of 10	angle horizontal vertical perpendicular parallel diagonal obtuse acute			tenths fractions denominator numerator integer	quadrilateral trapezium parallelogram base	column addition regrouping column subtraction exchange measure trundle wheel perimeter	unit fractions	analogue digital am/pm 12/24 hour clock	find the difference how many more how much less how much taller how much heavier how much lighter one-step two-step	scaling product	Roman Numerals duration how long vertical number-line	estimate mass capacity g/kg ml/l measuring cylinder		



# Girlington Primary School Mathematics Curriculum

Year 3

Term	Autumn 1				Autumn 2				Spring 1			Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Fractions	Shape	Addition and subtraction	Multiplication and Division	Fractions	Shape	Addition and Subtraction	Fractions	Time	Addition and Subtraction	Multiplication and Division	Time	Addition and Subtraction	Fractions	Recap and apply.
National Curriculum Subject Content																	
Learn By Heart	3 x table 6 x table				4 x table 8 x table				Pairs to 100 in 5s Pairs to 1000 in 50s			Division facts for 3x table Division facts for 6x table		Division facts for 4x table Division facts for 8x table		Revise and consolidate previous targets.	
Arithmetic	Revise adding and subtracting 2-digit numbers mentally and on a number-line and mentally. Missing box questions. Fractions of a number. Adding fractions with the same denominator. + and - 10, 100 and 1000 to any number.				Grid method Division by partitioning.				Grid method Column addition and subtraction.			Revise and consolidate all previous objectives.					
Problem Solving	Act it out				Draw a diagram				Make a table/list			Trial and Improvement (new strategy)		Applying problem solving strategies to a variety of problems.			

Calculations	<p><b>Diamond method for doubling and halving</b></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Double 27</p> </div> <div style="text-align: center;"> <p>Half of 36</p> </div> </div>	<p><b>Multiplying multiples of 10</b></p> <div style="display: flex; justify-content: space-around;"> <div> <p><b>40 x 6</b></p> <p>4x6 is 24 Make it ten times bigger is 240</p> </div> <div> <p><b>40 x 60</b></p> <p>4 x 6 is 24 Make it ten times bigger is 240 Make it ten times bigger is 2400</p> </div> </div>													
	<p><b>Column Addition</b></p> $\begin{array}{r} \textcircled{1} \textcircled{1} \\ 123 \\ + 89 \\ \hline 212 \end{array}$	<p><b>Find a fraction of an amount</b></p> <p><math>\frac{3}{4}</math> of 16</p>													
	<p><b>Column Subtraction (with exchange)</b></p> $\begin{array}{r} 7 \\ 2 \cancel{1} 6 \\ - 137 \\ \hline 349 \end{array}$ <p>Ensure the correct language is used. "6 - 7 is a negative number."</p>	<p><b>Find duration of an event using a vertical numberline</b></p> <div style="display: flex; justify-content: space-around;"> <div> <p>An event starts at 1:20pm and lasts 12 minutes. When does it end?</p> </div> <div> <p>An event starts at 3:30pm and finishes at 3:59pm. How long does it last?</p> <p>10+10+9= 29min</p> </div> </div>													
	<p><b>Grid Method</b></p> <table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px;"><b>13 x 3</b></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">x</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">3</td> <td rowspan="4" style="padding: 0 20px;"><b>30 + 3 = 33</b></td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">10</td> <td style="border: 1px solid black; padding: 5px;"></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">30</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">3</td> <td style="border: 1px solid black; padding: 5px;"></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">3</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"></td> <td style="border: 1px solid black; padding: 5px;"></td> <td style="border: 1px solid black; padding: 5px;"></td> </tr> </table>	<b>13 x 3</b>	x	3	<b>30 + 3 = 33</b>	10		30	3		3				
	<b>13 x 3</b>	x	3	<b>30 + 3 = 33</b>											
10		30													
3		3													
<p><b>Division - Partitioning</b></p>															





# Girlington Primary School Mathematics Curriculum

## Year 4

Term	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Addition and Subtraction	Multiplication and Division	Multiplication and Division	Fractions	Place Value	Addition and Subtraction	Shape	Multiplication and Division	Multiplication and Division	Place Value
National Curriculum Subject Content												
Objectives	<p>Revise telling the time objectives from Y3.</p> <p>How big is 10,000?</p> <p>Identify and represent numbers in different ways.</p> <p>Round numbers to the nearest 10 and 100.</p> <p>Recognise the place value of each digit and partition numbers with four digits.</p> <p>Compare and order numbers beyond 1000.</p> <p>Round to the nearest 1000.</p> <p>Count backwards through 0 to include negative numbers.</p> <p>Read Roman numerals (I to C) and explain how the number system changed.</p>	<p>Revise telling the time objectives from Y3.</p> <p>Addition and subtraction with 4-digit numbers, including using column addition and subtraction.</p> <p>Using bar models to represent addition, subtraction and difference problems.</p> <p>Estimate and use the inverse to check answers.</p> <p>Solve adding, subtracting and find the difference problems involving negative numbers by counting forwards and backwards through zero.</p>	<p>Revise telling the time objectives from Y3.</p> <p>Solve addition, subtraction and find the difference two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Use bar models to represent these problems.</p> <p>Measure and calculate the perimeter of a rectilinear figure.</p>	<p>Revise telling the time objectives from Y3.</p> <p>What is multiplication?</p> <p>Recognise, find and use factor pairs (factor rainbow jotting).</p> <p>Multiply 2- and 3-digit numbers by a 1-digit number (short multiplication).</p> <p>What is division?</p> <p>Understanding grouping and sharing.</p> <p>Answer questions like "How many 7s in 36?"</p> <p>Use the partition method for division to aid mental division.</p>	<p>Revise place value objectives.</p> <p>Divide by 10 and 100.</p> <p>Convert between different units of measure.</p> <p>Write and convert time between analogue and digital.</p> <p>12- and 24-hour clock</p> <p>Solve problems involving converting from hours to minutes, minutes to seconds, years to months and weeks to days.</p>	<p>Recognise and show families of common equivalent fractions.</p> <p>Count in hundredths; recognise that dividing by 100 and dividing tenths by tenths is to make hundredths.</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths.</p>	<p>Revise dividing by 10 and 100.</p> <p>Compare numbers with the same number of decimal places.</p> <p>Round decimals to nearest whole number using a number line jotting.</p> <p>Recognise and write decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math> and <math>\frac{3}{4}</math>.</p> <p>Estimate, compare and calculate different measures.</p>	<p>Solve simple measure and money problems involving fractions and decimals.</p> <p>Revise using a vertical number line to find the duration of events from information presented on time graphs.</p> <p>Interpret and present information on bar graphs, pictograms and time graphs.</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p>Identify lines of symmetry.</p> <p>Complete a symmetric picture.</p> <p>Identify acute and obtuse angles.</p> <p>Compare and order angles.</p> <p>Compare and classify geometric shapes.</p> <p>Co-ordinates.</p> <p>Plot points to complete a polygon.</p> <p>Translations</p>	<p>MTC Preparation</p>	<p>Find the area of rectilinear shapes by counting squares – counting in rows.</p> <p>Answer questions like "How many 7s in 36?"</p> <p>Use the partition method for division of three digit numbers.</p>	<p>Consolidate and revise all previous place value objectives.</p>
Vocabulary	Revise	<p>compare</p> <p>order</p> <p>partition</p> <p>Roman numerals</p>	<p>column estimate</p> <p>inverse</p> <p>find the difference</p> <p>how many more</p> <p>how much less</p> <p>how much taller</p> <p>how much heavier</p> <p>how much lighter</p> <p>digit</p> <p>numeral</p> <p>calculate</p> <p>family</p>	<p>Perimeter</p> <p>measure</p> <p>represent</p>	<p>partitioning</p> <p>factor</p>	<p>convert</p> <p>cm, m, km</p> <p>analogue</p> <p>digital</p> <p>24-hour</p> <p>12-hour</p>	<p>numerator</p> <p>denominator</p> <p>equivalent</p> <p>ones</p> <p>tenths</p> <p>unit fraction</p>	<p>round</p> <p>equivalent</p> <p>equal</p> <p>part</p> <p>out of</p> <p>whole</p> <p>estimate</p> <p>compare</p>	<p>bar chart</p> <p>duration</p> <p>pictogram</p> <p>table</p>	<p>compare</p> <p>classify</p> <p>triangles</p> <p>quadrilateral</p> <p>angle</p> <p>symmetry</p> <p>symmetrical</p>		
	New	<p>ascending</p> <p>descending</p> <p>round</p> <p>nearest</p> <p>multiple</p> <p>ten times</p> <p>bigger</p> <p>ten times</p> <p>smaller</p> <p>negative</p> <p>positive</p>		<p>rectilinear</p> <p>figure</p> <p>context</p>	<p>remainder</p> <p>dozen</p> <p>half a dozen</p> <p>baker's dozen</p> <p>score (20)</p> <p>gross (144)</p> <p>short</p> <p>multiplication</p> <p>area</p> <p>factor</p> <p>factor pairs</p>	<p>Unit of</p> <p>measure</p>	<p>hundredths</p> <p>proper</p> <p>fraction</p>	<p>decimal</p> <p>places</p>	<p>time</p> <p>graph</p>	<p>equilateral</p> <p>isosceles</p> <p>scalene</p> <p>obtuse</p> <p>acute</p> <p>right angle</p> <p>right angled</p> <p>triangle</p> <p>co-ordinates</p> <p>polygon</p> <p>translate</p> <p>axis</p> <p>axes</p> <p>heptagon</p> <p>octagon</p> <p>decagon</p>		



## Year 4

Term	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Addition and Subtraction	Multiplication and Division	Place Value	Fractions	Fractions	Shape	Place value	Shape and Time	Addition and Subtraction	Multiplication and Division

**National Curriculum Subject Content**

Learn By Heart	Times tables. Value of I, V, X, L and C in Roman Numerals.	Number pairs to 20 (revision) Times tables.	Times tables	Times tables.	Conversions mm to cm and cm to mm. Times tables.	Times tables. Know Fraction and decimal equivalences for $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{10}$ .	Times tables. Converting units of time.	Division Facts. Revise times tables for children who need it.	Division Facts. Revise times tables for children who need it.	Division Facts. Revise times tables for children who need it.	Division Facts. Revise times tables for children who need it.
Arithmetic	Find 1000 more or less than an given number. Column addition and subtraction. Efficient subtraction calculations. Using estimation to check answers. Using the inverse to answer missing box questions.		Recap partitioning. Continue to practise column addition and subtraction. Dividing by 10 and 100 Add and subtract fractions with the same denominator Multiplying 3 numbers. Multiplying by 10 and 100. Multiplying and dividing by 1 and multiplying by 0. Division by partitioning. "How many 7s in 36?" Foundation for bus stop method.		Multiplying and dividing by 10 and 100.	Revise all arithmetic methods.					
Problem Solving	Act it out.	Make a list or a table.	Draw a diagram.		Trial and Improvement		Find a pattern. (New strategy)			Draw a diagram.	Make a list.

<b>Calculations</b>	<b>Rounding</b>	<p style="text-align: center;"><b>For understanding:</b> Round 213 to the nearest 10.</p> <div style="text-align: center;"> </div> <p style="text-align: center;"><b>An efficient procedure:</b> Round 618 to the nearest 100.</p> <div style="text-align: center;"> <table style="margin: auto;"> <tr><td style="text-align: center;">H</td><td style="text-align: center;">T</td><td style="text-align: center;">O</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">1</td><td style="text-align: center;">8</td></tr> </table> <p style="text-align: center;">↓</p> </div> <p>Circle the number that could change. Draw an arrow pointing to the deciding digit. Underlined digits will be zero in the answer.</p>	H	T	O	6	1	8	<b>Short multiplication</b>	$\begin{array}{r} 78 \\ \times 2 \\ \hline 156 \end{array}$														
	H	T	O																					
	6	1	8																					
	<b>Column headings</b>	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 2px;">Thousands</td> <td style="text-align: center; padding: 2px;">Hundreds</td> <td style="text-align: center; padding: 2px;">Tens</td> <td style="text-align: center; padding: 2px;">Ones</td> <td style="text-align: center; padding: 2px;">tenths</td> <td style="text-align: center; padding: 2px;">hundredths</td> <td style="text-align: center; padding: 2px;">thousandths</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Th</td> <td style="text-align: center; padding: 2px;">H</td> <td style="text-align: center; padding: 2px;">T</td> <td style="text-align: center; padding: 2px;">O</td> <td style="text-align: center; padding: 2px;">t</td> <td style="text-align: center; padding: 2px;">h</td> <td style="text-align: center; padding: 2px;">th</td> </tr> </table>	Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths	Th	H	T	O	t	h	th	<b>Factor Rainbow</b>							
	Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths																	
Th	H	T	O	t	h	th																		
<b>Converting units jottings</b>	<table style="margin: auto;"> <tr> <td style="text-align: center;"> <b>Length</b>  <math>\div 10 \quad \div 100</math>  </td> <td style="text-align: center;"> <b>Mass</b>  <math>\div 1000</math>  </td> <td style="text-align: center;"> <b>Capacity</b>  <math>\div 1000</math>  </td> </tr> </table>	<b>Length</b> $\div 10 \quad \div 100$ 	<b>Mass</b> $\div 1000$ 	<b>Capacity</b> $\div 1000$ 	<b>Division – Preparation for the bus stop method</b>	<p><b>How many 7s in 46? 6 with 4 left over</b></p> $\begin{array}{r} 7 \\ 14 \\ 21 \\ 28 \\ 35 \\ \hline 42 \\ 49 \end{array}$																		
<b>Length</b> $\div 10 \quad \div 100$ 	<b>Mass</b> $\div 1000$ 	<b>Capacity</b> $\div 1000$ 																						
<b>x and ÷ by 10, 100</b>	<p style="text-align: center;"><math>52.1 \div 100</math></p> <p>Write the column headings. Place the number in the correct columns. Move the digits.</p> <table style="margin: auto; text-align: center;"> <tr><td style="padding: 0 10px;">H</td><td style="padding: 0 10px;">T</td><td style="padding: 0 10px;">O</td><td style="padding: 0 10px;">.</td><td style="padding: 0 10px;">t</td><td style="padding: 0 10px;">h</td><td style="padding: 0 10px;">th</td></tr> <tr><td style="padding: 0 10px;">5</td><td style="padding: 0 10px;">2</td><td style="padding: 0 10px;">7</td><td></td><td></td><td></td><td></td></tr> <tr><td style="padding: 0 10px;">0</td><td style="padding: 0 10px;">5</td><td style="padding: 0 10px;">2</td><td></td><td></td><td></td><td></td></tr> </table>	H	T	O	.	t	h	th	5	2	7					0	5	2					<b>Division – Partitioning</b>	<p style="text-align: center;"><math>96 \div 4</math></p> <div style="text-align: center;"> </div> <p style="text-align: center;"><math>20 + 4 = 24</math></p>
H	T	O	.	t	h	th																		
5	2	7																						
0	5	2																						



# Girlington Primary School Mathematics Curriculum

## Year 5

Term	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Multiplication and division	Fractions	Addition and Subtraction	Multiplication and division	Place Value	Fractions	Shape	Multiplication and Division	Fractions	Revision
<b>National Curriculum Subject Content</b>												
Objectives	Read, write and represent numbers to 1 million. Order and compare numbers to 1 million. Count forwards and backwards in steps of powers of 10. Rounding to the nearest 10, 100, 1000, 10 000 using a number-line jotting. Introduce efficient jotting. Interpret negative numbers in context. Count forwards and backwards with positive and negative whole numbers including through 0. Solve problems using these skills.	Add and subtract numbers mentally with increasingly large numbers. Solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why.	Recognise and use square and cube numbers. Find all the factors of a number using the factor rainbow jotting. Identify multiples of a number. Find common factors and multiples. Use the vocabulary of prime numbers, prime factors and composite numbers. Recall all primes up to 19 and establish whether a number up to 100 is prime.	Revise previous fractions knowledge. Identify equivalent fractions with visual representations. Move on to the jotting for equivalent fractions. Compare and order fractions whose denominators are multiples of the same number. Add and subtract fractions with the same denominator. Recognise mixed and improper fractions and convert from one to the other.	Solve comparison, sum and difference problems using information presented in a line graph. Complete, read, interpret and answer questions about information in tables including timetables. Use a vertical number-line to work out time problems. Use adding and subtracting skills to solve problems involving measure. Use the properties of rectangles to deduce related facts. Measure and calculate the perimeter of composite rectilinear shapes.	Interpret remainders appropriately for the context when solving division problems. Solve problems, including multistep problems, involving all four operations and understand the meaning of the equals sign. Solve problems involving multiplication and division including scaling by simple fractions and problems involving rates. Solve problems involving converting between different units of time.	Convert between different units of metric measurement. Solve problems involving conversions. Recognise and read Roman numerals to 1000 and recognise years written in Roman Numerals. Recognised and use thousandths and relate this to tenth, hundredths and decimal notation. Read, write, order and compare numbers with up to 3 decimal places. Solve problems involving decimals up to 3dp. Round a decimal to the required number of decimal places.	Add fraction with denominators that are multiples of the same number. Multiply fractions and mixed numbers by whole numbers (with support from equipment and diagrams). Recognise and understand the % symbol. Write percentages as a fraction with denominator 100 and as a decimal. Convert fractions with denominators of 2, 4, 5, 10 and 25 to a fraction with a denominator of 100 and then a percentage. Solve problems involving a knowledge of percentage and decimal equivalents of fractions with the denominators 2, 4, 5, 10 or 25.	Know angles are measured in degrees. Estimate and compare acute, obtuse and reflex angles. Draw and measure angles using a protractor. Identify: Angles at a point, one whole turn, on a straight line, half a turn and other multiples of 90°. 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.	Understand and use approximate equivalents between metric and imperial units (e.g. inches, pounds and pints). Distinguish between regular and irregular polygons based on reasoning about sides and angles. Calculate and compare the area of rectangles (including squares) using standard units (cm <sup>2</sup> and m <sup>2</sup> ). Estimate the area of irregular shapes. Identify 3D shapes from 2D representations. Estimate volume (e.g. by using 1cm <sup>3</sup> blocks to build cubes and cuboids). Estimate capacity (e.g. by using water).	Revise, consolidate and extend all fractions learning.	Use AFL to determine which subjects need to be revised and consolidated.
Vocabulary	Revise	compare value round nearest negative positive odd/even decimal places	mentally estimate difference language e.g. how many more how much more how much taller calculate	multiples factors	numerator denominator equivalent convert	length mass volume perimeter rectilinear comparison line graph vertical	remainders grouping sharing divide split share represents vertical numberline	convert Roman numerals decimal places equivalents	denominator equivalence hundredths	angle degrees obtuse acute whole turn half turn quarter of a turn intersection 3D shape names isosceles equilateral right angle acute faces edges vertices acute obtuse	metric polygons length width volume capacity	Revise and consolidate all vocabulary.
	New	multiple of 10, 100, 1000 thousandths integer non-integer	levels of accuracy	common multiple common factor prime composite prime factor square number squared cube number cubed	mixed numbers improper fractions	timetable	scaling rates timetable	metric units thousandths	percent parts per hundred approximate represents sale amount original amount	pyramid prism reflex around a point straight line right angle	imperial pints pounds (lb) inches regular irregular area	



# Girlington Primary School Mathematics Curriculum

Year 5

Term	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Concept	Place Value	Addition and Subtraction	Multiplication and division	Fractions	Addition and Subtraction	Multiplication and division	Place Value	Fractions	Addition and Subtraction	Multiplication and Division	Fractions	Revision
<b>National Curriculum Subject Content</b>												
<b>Learn By Heart</b>	Name all column headings from millions to ones. Column headings from tenths to millionths	All times tables and division facts. (revision)	All times tables and division facts. (revision) Square numbers up to 12 <sup>2</sup> Primes up to 19.	Fraction and decimal equivalents for halves and quarters.	Telling the time.	Key time facts e.g. 60 minutes = 1hr; 365 days = 1 year	Convert between different units of measurement.	Write a percentage as a fraction with a denominator of 100 and as a decimal.	Angle facts e.g. straight line = 180° Identify 3D shapes.	Fraction, decimal and percentage equivalents for halves and quarters.	Fraction, decimal and percentage equivalents for tenths.	Fraction, decimal and percentage equivalents for fifths.
<b>Arithmetic</b>	Multiply and divide by 10, 100 and 1000. Add and subtract numbers with more than 4 digits including using column addition and subtraction.		Multiply numbers up to 4 digits by 1 digit number using short multiplication. Use long multiplication to multiply a 4 digit by a 2 digit number. Use bus stop division to divide. Convert between improper fractions and mixed numbers. Add and subtract fractions with the same denominator.		Use column addition and subtraction to add and subtract decimals, including questions of the form 5-3.43. Multiply and divide numbers mentally, drawing on known facts. Find a fraction of a number.		Multiplying a fraction by a whole number. Add two fractions with different denominators.		Revise and consolidate all arithmetic methods.			
<b>Problem Solving</b>	Act it out. Draw a picture. Trial by improvement.		Make a list or table. Find a pattern.		Act it out. Trial by improvement.		Working backwards (new strategy for Y5)		Draw a picture. Find a pattern.		Working backwards.	

<b>Calculations</b>	<p><b>Rounding</b></p> <p style="text-align: center;"><b>For understanding:</b> Round 213,523 to the nearest 1000.</p> <div style="text-align: center;"> <p>213,000      213,500      214,000 1000 before      middle      1000 after</p> </div> <p style="text-align: center;"><b>An efficient procedure:</b> Round 213,523 to the nearest 1000. HTh TTh Th H T O . t h th th hth m</p> <div style="text-align: center;"> <p>2 1 <u>3</u> 5 2 3</p> </div> <p>Circle the number that could change. Draw an arrow pointing to the deciding digit. Underlined digits will be zero in the answer.</p>	<p><b>Fractions of a Number</b></p> <p><math>\frac{3}{4}</math> of 240</p> <div style="text-align: center;"> </div>																												
	<p><b>Column headings</b></p> <table border="1" style="width: 100%; text-align: center; font-size: small;"> <tr> <td>Millions</td> <td>Hundred Thousands</td> <td>Ten Thousands</td> <td>Thousands</td> <td>Hundreds</td> <td>Tens</td> <td>Ones</td> <td>•</td> <td>tenths</td> <td>hundredths</td> <td>thousandths</td> <td>ten thousandths</td> <td>hundred thousandths</td> <td>millionths</td> </tr> <tr> <td>M</td> <td>HTh</td> <td>TTh</td> <td>Th</td> <td>H</td> <td>T</td> <td>O</td> <td>.</td> <td>t</td> <td>h</td> <td>th</td> <td>th</td> <td>hth</td> <td>m</td> </tr> </table>	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	•	tenths	hundredths	thousandths	ten thousandths	hundred thousandths	millionths	M	HTh	TTh	Th	H	T	O	.	t	h	th	th	hth	m	<p><b>Convert between mixed numbers and improper fractions.</b></p> <p><b>Mixed number to improper fraction</b></p> <div style="text-align: center;"> </div> <p><b>Improper fraction to mixed number</b></p> <p>How many 5s in 7? <math>\frac{7}{5} = 1 \frac{2}{5}</math></p> <p>7 ÷ 5 = 1 with 2 left over</p>
	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	•	tenths	hundredths	thousandths	ten thousandths	hundred thousandths	millionths																
	M	HTh	TTh	Th	H	T	O	.	t	h	th	th	hth	m																
	<p><b>Long Multiplication</b></p> <div style="text-align: center;"> </div>	<p><b>Use a vertical numberline to answer questions about timetables.</b></p> <p>A journey starts at 1:20pm and lasts 12 minutes. When does it end?</p> <div style="text-align: center;"> </div>																												
	<p><b>Bus Stop Division</b></p> <div style="text-align: center;"> </div>	<p>A journey starts at 3:30pm and finishes at 5:59pm. How long does it last?</p> <div style="text-align: center;"> </div>																												
<p><b>Equivalent fractions jotting</b></p> <div style="text-align: center;"> </div>																														



# Girlington Primary School Mathematics Curriculum

## Year 6

Term	Autumn 1		Autumn 2		Spring 1		Spring 2	Summer 1		Summer 2	
Concept	Place Value (3 weeks)	Fractions (3-4 weeks)	Addition and Subtraction (3 weeks)	Multiplication and Division (3-4 weeks)	Shape (3 – 4 weeks)	Fractions (2-3 weeks)	SATs Revision	Place Value (2 weeks)	Multiplication and Division (2 weeks)	Fractions (2 weeks)	Problem Solving- Make an equation (3-4 weeks)
<b>National Curriculum Subject Content</b>											
<b>Objectives</b>	Read, write, order and compare numbers up to 10,000,000. Determine the value of each digit. Round any whole number to any degree of accuracy. Solve problems involving the calculation and conversion of units of measure. Use, read, write and convert between standard units.	Identify the value of each digit in decimals. Recall and use equivalences between simple fractions, decimals and percentages. Convert between fractions, decimals and percentages. Reason about which fraction/decimal/percentage is greater using knowledge of equivalents. Use percentage equivalents to compare fractions and decimals. Associate a fraction with division and calculate decimal fraction equivalents.	Solve addition, subtraction and find the difference multi-step problems, deciding which operations and methods to use and why. Find unknown angles in any triangles, quadrilaterals, and regular polygons. Find missing angles around a point, on a straight line, or when vertically opposite. Interpret and construct line graphs and answer questions about them. Use negative numbers in context, and calculate intervals across 0 – related to line graphs of temperature.	Solve problems involving all operations. Identify common factors, common multiples and prime numbers. Know and apply formulae for area and volume. Calculate, estimate and compare volume of cubes and cuboids. Recognise that shapes with the same area can have different perimeters and vice versa. Calculate and interpret the mean as an average. Convert between miles and km.	Describe positions on the full coordinate grid (all 4 quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. Compare and classify geometric shapes based on their properties. Investigate simple formula (Euler's law $f+v-e=2$ ). Recognise, describe and build simple 3-D shapes, including making nets. Draw 2-D shapes using given dimensions and angles. Solve problems involving scale factors.	Recall and use equivalences between simple fractions, decimals and percentages. Use common factors to simplify fractions. Use common multiples to express fractions in the same denominator. Compare and order fractions, including fractions $>1$ . Understand and solve word problems involving fractions. Solve problems involving the calculation of percentages. Interpret and construct pie charts.	Objectives to be covered determined by AfL.	Round fluently and automatically to any degree of accuracy. Estimate answers to calculations. Solve problems that involve answers being rounded to a specified degree of accuracy. Determine an appropriate degree of accuracy given the context of a problem.	Solve problems involving unequal sharing. Solve problems involving the relative size of two quantities. Solve problems involving scales and maps.	Use equivalent fractions and FDP equivalences fluently and accurately. Use common multiples to express fractions with a common denominator. Reason about the size of fractions, decimals and percentages using knowledge of equivalence.	Use simple formulae. Expressing missing number problems algebraically. Use substitution to solve problems using algebraic equations.
<b>Vocabulary</b>	<b>Revise</b>	value round degree of accuracy convert multiple of 10 nearest	equivalent  triangles quadrilaterals regular polygons point straight line negative	common factors multiples primes composite area volume perimeter	co-ordinates quadrant translate reflect classify vertices edges faces curved flat scalene isosceles equilateral	common factors multiples denominator percentages improper fractions		round accuracy appropriate multiple of 10 nearest		equivalent common multiples compare	formula formulae
	<b>New</b>	standard units	vertically opposite	miles km mean average	formula scale factors congruent similar base angles nets	pie chart			unequal sharing scale scale factor		express equations
<b>Subsequent KS2 Learning</b>	Understand and use place value for decimals, measures and integers of any size.	Work interchangeably with decimals and fractions. Define percentage as 'number of parts per hundred', interpret percentages as a fraction or a decimal.	Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.	Use the concepts and vocabulary of prime numbers, factors, multiples, common factors and multiples, highest common factor, lowest common multiple and prime factorisation. Derive and apply formulae to calculate area and perimeter.	Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data.	Use approximation through rounding to estimate.		Answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$ . Round numbers and measures to an appropriate degree of accuracy.	Use ratio notation, including reduction to simplest form. Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction. Use scale factors, scale diagrams and maps.	Work interchangeably with terminating decimals and their corresponding fractions.	Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.

Term	Autumn 1		Autumn 2		Spring 1		Spring 2	Summer 1		Summer 2	
Concept	Place Value (3 weeks)	Fractions (3-4 weeks)	Addition and Subtraction (3 weeks)	Multiplication and Division (3-4 weeks)	Shape (3-4 weeks)	Fractions (2-3 weeks)	SATs Revision	Place Value (2 weeks)	Multiplication and Division (2 weeks)	Fractions (2 weeks)	Problem Solving- Make an equation (3-4 weeks)

### National Curriculum Subject Content

Learn By Heart	Place Value Headings Length Conversions	Fraction, Decimal and Percentage Equivalents – Quarters/Fifths	Angle Facts	Prime Numbers Area Facts	Names of polygons.  Name parts of a circle; diameter= 2x radius.  Identify 3D shape from net.	Revise FDP equivalences – mixed types.	Revise LBH as needed.	Revise LBH as needed.	Square numbers Cube numbers	Further FDP equivalences.	Revise LBH as needed.
Arithmetic	Multiply and divide numbers by 10, 100 and 1,000.	Multiply two fractions.  Divide a fraction by whole numbers.  Add and subtract fractions.	Adding and subtracting with decimals (link to place value).	Long Multiplication  Long Division BODMAS	Give answers to division questions with up to 2 decimal places.  Multiply decimals by a whole number.	Percentage of a number. Adding mixed numbers.	Use knowledge of fractions and decimals equivalents to be flexible with calculations.	Revise and apply all arithmetic methods learned.			
Problem Solving	Act it out/Draw a diagram Solve problems involving unequal sharing. Solve problems involving the relative size of two quantities.		Draw a diagram/ Make a list or table Use bar models to solve problems Use tree diagrams to enumerate all possible combinations of variables.	Make an Equation (New Y6 Learning) Learn to solve algebraic equations. Apply this skill to solving problems.		Working Backwards		Trial and Improvement Develop mathematical resilience and determination.		Find a Pattern	

Calculations	+ fractions  butterfly method	$\begin{array}{r} 3 \quad + \quad 4 \\ \frac{1}{2} + \frac{2}{3} = \frac{7}{6} \end{array}$	finding a % of a number	<b>30% of 450</b> <b>Replace % with a fraction.</b> $\frac{3}{10} \text{ of } 450 \div 10 = 45$ $45 \times 3 = 135$	<b>99% of 200</b>  1%=2  99% = 200-2=198
	x fractions  equals method	$\frac{1}{2} \times \frac{2}{3} = \frac{2}{6}$	52% of 4300	<b>52% of 4300</b> <b>Replace % with a fraction.</b> $\frac{52}{100} \text{ of } 4500 \div 100 = 45$ $45 \times 52 = 2340$	<b>5% of 320</b>  10%=32  <b>Half that</b>  5%=16
	+ fractions  half a butterfly	$\frac{1}{2} + \frac{5}{10} = \frac{1}{10}$	Long division	2132 ÷ 41 1. Write the 41 times table by adding the 40 times table to the 1 times table  40 + 1 = 41 80 + 2 = 82 120 + 3 = 123 160 + 4 = 164 200 + 5 = 205 240 + 6 = 246 280 + 7 = 287 320 + 8 = 328 360 + 9 = 369  2. Use the normal bus stop method to divide.  $41 \overline{) 2132}$	
	- fractions  butterfly method	$\frac{4}{5} - \frac{2}{3} = \frac{2}{15}$			
	+ mixed numbers	$1\frac{1}{2} + 2\frac{2}{3} = 3\frac{8}{6} = 4\frac{2}{3}$			
			Find remainders using column subtraction if needed. $\begin{array}{r} 213 \\ -205 \\ \hline 8 \end{array}$		



# Girlington Primary School Mathematics Curriculum