



Mathematics is an interconnected subject in which students need to be able to move fluently between representations of mathematical ideas. The programme of study is organised into apparently distinct domains, but students should build on key stage 2 and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge in science, geography, computing and other subjects.

The curriculum is taught through the six mathematical strands of: Number and Ratio, Algebra, Geometry and Measures, Statistics and Probability

	Autumn 1a	Autumn 1b	Spring 2a	Spring 2b	Summer 3a	Summer 3b
CONTENT	Algebra: Brackets	Number Properties	Estimation and	Angles and	Probability	Ratio and
Declarative / core / powerful	and Expressions	and Fractions	Circles	Polygons	,	Proportion
Knowledge – 'Know What'						
Intent	Algebra is the	The skills involving	As the results to	This half term	This half term will	Many other areas
	language of maths.	indices, factors and	calculations	builds on the year 7	be students first	of maths work in
	As the complexity	multiples will give	become more	work on angles.	insights into	direct
	of problems	students the skills	complex, a new	These skills will be	probability and	proportion/in a
	increase, as does	to be able to	rounding strategy	important when	prepares students	ratio. This topic will
	the knowledge of	manipulate	is needed.	working with	to work in more	prepare student for
	algebra. This half	fractions. These	Rounding to	shapes where	advanced cases of	working with ratio
	term is vital for	skills will also be	significant figures	angles give us	probability in	in other contexts
	manipulating	necessary in other	will be useful for	insights into a	future years.	such as similar
	algebra in more	topics in the future	work with circles.	shapes properties		shapes.
	advanced settings.		This topic will	(such as lengths in		
			prepare students	a triangle)		
			for working in 3D.			
Skills	Students will be	Students will be	Students will be	Students will be	Students will be	Students will be
	able to:	able to:	able to:	able to:	able to:	able to:
	Expand brackets					Simplify ratios



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Procedural		Multiply and divide	Round a number to	Use the rules for	Clear	
Knowledge – 'Know	Solve equations	expressions using	a certain number	angles contained	misconceptions on	Form and
How'	involving brackets	the laws of indices	of significant	within parallel lines	probability formed	manipulate ratios
			figures		by experiences in	
	Find the Gradient	Use the "power of		Know the	"the real world"	Use ratios to solve
	of a line	power" rule	Estimate	properties of the		problems
			calculations	special	Find probability of	
	Read and interpret	Recognise prime		quadrilaterals and	single events in	Use a scaling
	real life graphs	numbers up to 97	Find the upper and	solve angle	words and in	method to solve
			lower bound of a	problems	numbers	problems in direct
		Proof if a number is	rounded number			proportion or
		prime by		Solve problems	Find an	inverse proportion
		considering it's	Know the key parts	using	experimental	
		factors	of a circle	exterior/interior	probability	Solve problems
				angles of polygons		involving speed,
		Find all the factors	Find the		Use sample space	distance time
		of a number using	circumference of a		diagrams for more	
		factor pairs	circle		than one event	Convert metric
						units of
		Use the four	Find the perimeter			area/volume
		operations on	of a semi/quarter			
		fractions, improper	circle			
		fractions and mixed				
		numbers.	Find the radius of a			
			circle, given the			
			circumference			
			Find the area of a			
			circle			



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Key Questions	Is there more than 1 way we can solve an equation with brackets? What does a negative gradient mean?	Why do we add powers when we multiply expressions with powers? How can I prove that 91 is not a prime number? Can I add mixed numbers without	Find the area of semi and quarter circles Find the radius given the area of a circle When might I not estimate a calculation by rounding to 1 significant figure?	Why are using "z angles" or "F angles" unhelpful when using angles rules of parallel lines? Are rectangles always parallelograms? Are parallelograms	are you more likely to roll a "2" or a "6"? I have already flipped 3 tails in a row, am I more likely to get a heads on my next throw?	What different ways can you solve a problem in direct proportion? Are all sequences in direct proportion? How can I tell if something is in proportion or not?
				Are parallelograms always rectangles?		_
Assessment	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.	Students will be assessed on a Diagnostic quiz at the end of each unit and a retest to improve any gaps in learning.



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	A half termly	A half termly	A half termly	A half termly	A half termly	A half termly
	assessment will be	assessment will be	assessment will be	assessment will be	assessment will be	assessment will be
	completed in class	completed in class	completed in class	completed in class	completed in class	completed in class
	covering content	covering content	covering content	covering content	covering content	covering content
	covered this half	covered this half	covered this half	covered this half	covered this half	covered this half
	term, and previous	term, and previous	term, and previous	term, and previous	term, and previous	term, and previous
	topics covered at	topics covered at	topics covered at	topics covered at	topics covered at	topics covered at
	St. Mary's	St. Mary's	St. Mary's	St. Mary's	St. Mary's	St. Mary's
Links to careers/wider world		Calculating the largest possible shares for an amount Supermarket discounts Having a data sense when giving as fractions	Calculating RPMs of wheels/engines Planning designs involving circles	Angles have a number of applications in STEM	Probability emphasises that "gut instinct" is no replacement for being calculated, and it is good decision making to go with the most likely outcomes over the long run	Changing the quantities in a recipe to fit the number of people you are serving Art and scale drawings