The Willows Primary School

MATHS Curriculum

Subject Leader	Mrs Rebecca Evans (KS2) & Mrs Becky Oldfield (KS1)

INTENT

1. To develop children's mathematics skills through a systematic approach of fluency, variation and reasoning.
2. To acquire a deep, long-term, secure and adaptable understanding of maths.
3. To develop confidence in manipulating numbers with *increasing speed and accuracy,* including addition, subtraction, multiplication and division.
4. To ensure the children are introduced to each mathematical concept through a variety of strategies and representations.
5. To create a love of mathematics through an exciting and engaging mathematics curriculum which supports and challenges children throughout their mathematical learning journey.
6. To engage with mathematics in a variety of different ways e.g. active maths, use of resources, use of technology, open-ended challenges.
7. To develop the ability and confidence to explain mathematical thinking orally and in writing using accurate mathematical vocabulary.
8. To develop in the children an increased competence across the mathematics curriculum e.g. number, geometry, measurement and statistics.

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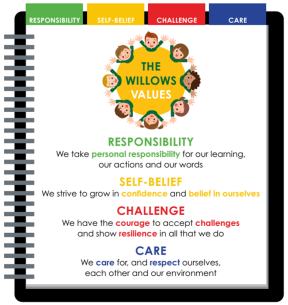

IMPLEMENTATION

Strategies are in place within school to develop each of the key areas of mathematics, ensuring coverage of the Nation Curriculum 2014, and systematic coverage of key skills.

- In Reception, objectives are taken from the Early Learning Goals to fit with the topic of study.
- From Year 1 to Year 6, each class follows the White Rose Maths Scheme of Learning, ensuring coverage, progression, small steps, fluency, variation, problem solving and reasoning.
- A sequence of lessons will progress from developing fluency within an area and then ensuring this knowledge is embedded with a variety of representations. Following this, the children will apply their knowledge to problem solving, reasoning and explanation within that area.
- Within a lesson, children will be given opportunities (as appropriate) to investigate areas using concrete, pictorial and abstract concepts.
- Classes have access to a range of concrete or pictorial resources available for children to select within a lesson.
- Teachers use a range of resources and strategies to deliver each lesson including active maths sessions, technology, practical activities.
- Children are encouraged and enabled to take responsibility for their learning through opportunities to independently select methods / resources etc to support and enhance their understanding
- Children should be encouraged to take responsibility for practicing their basic skills, number bonds and times tables, both at school and at home, at least weekly.
- A range of mathematical vocabulary is used within each lesson specific to the area of study.
- Each class will have an ongoing, interactive maths working wall containing e.g. mathematical vocabulary, models and images, sentence stems, key strategies to support and challenge the children in each current maths topic.

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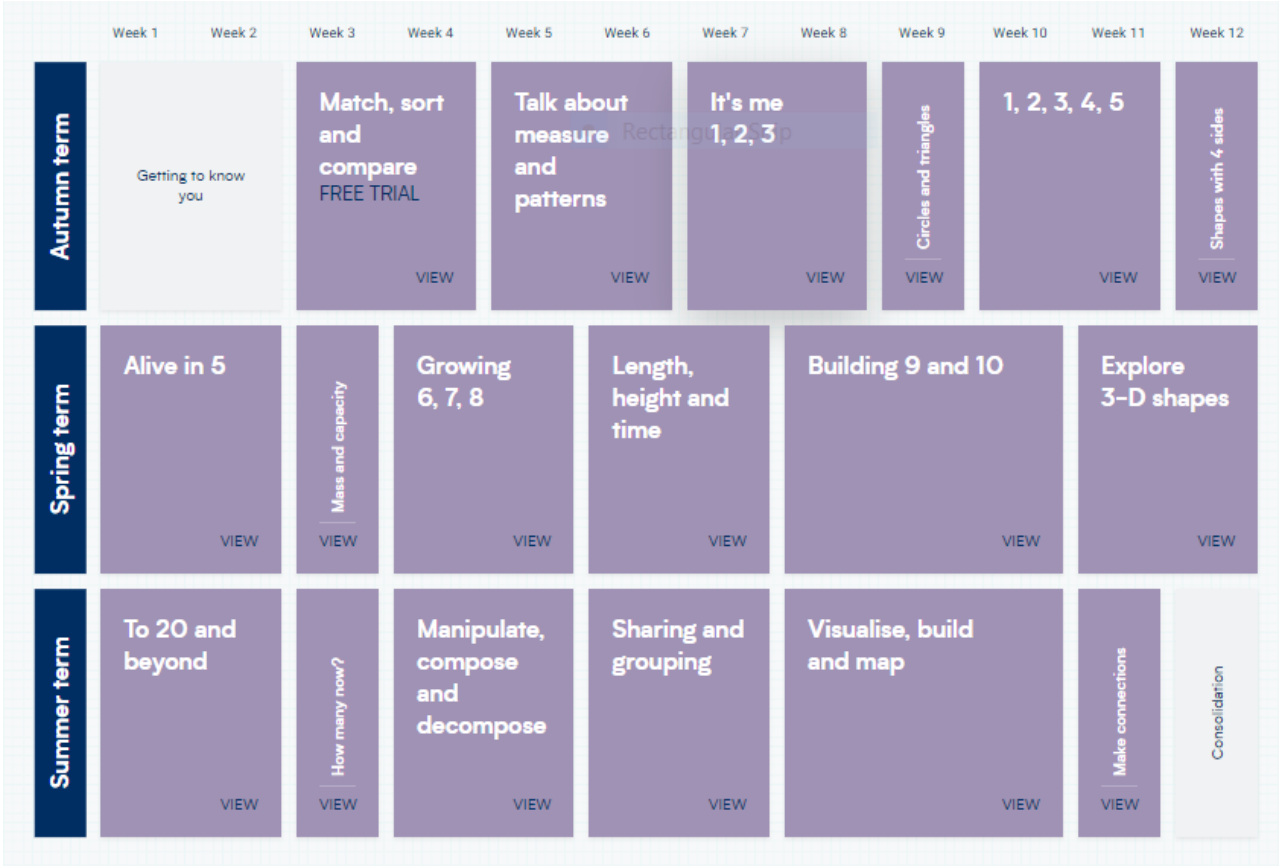
What is taught when?

EYFS



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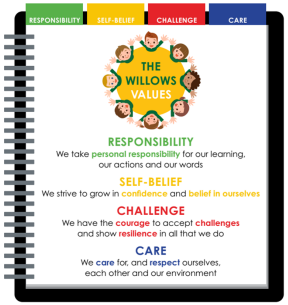
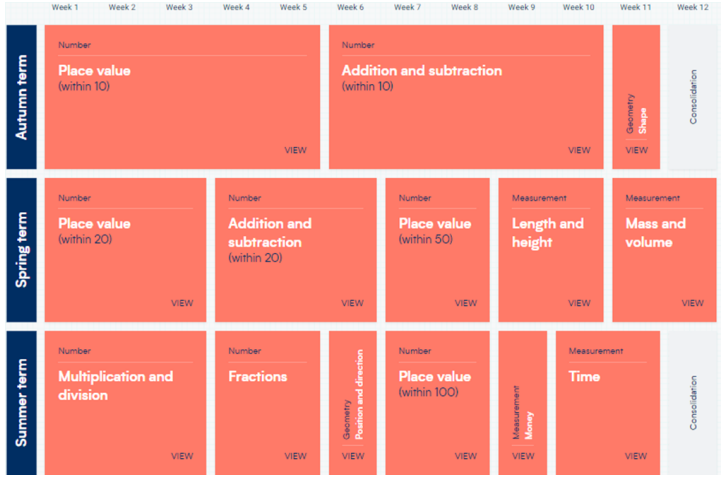
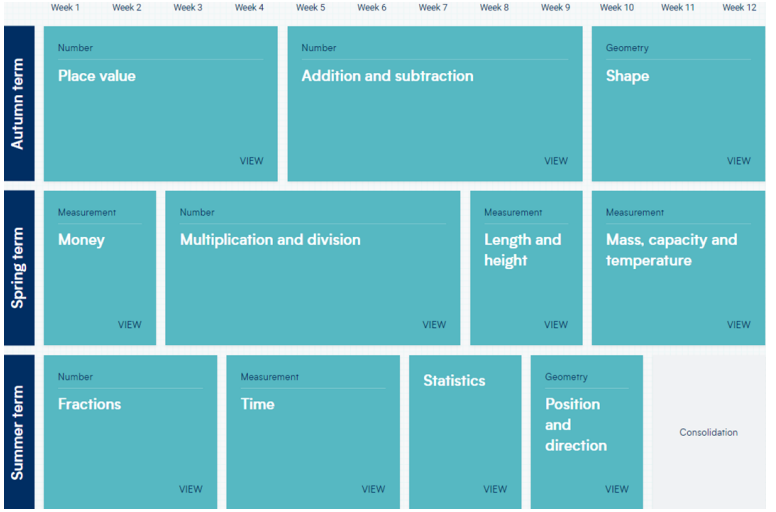


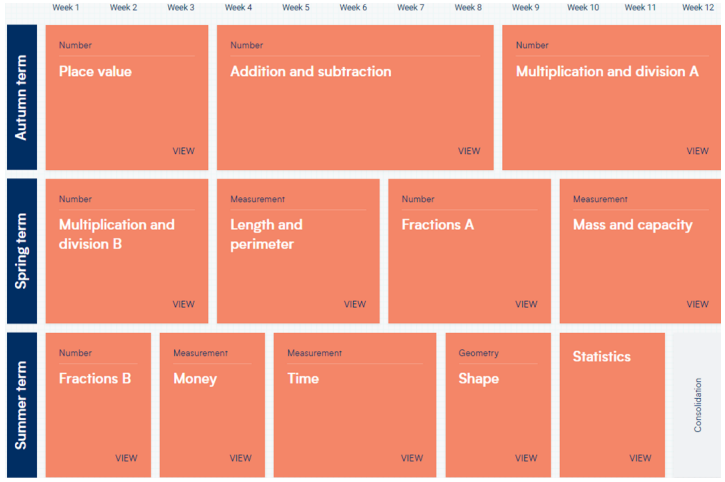
Year 1



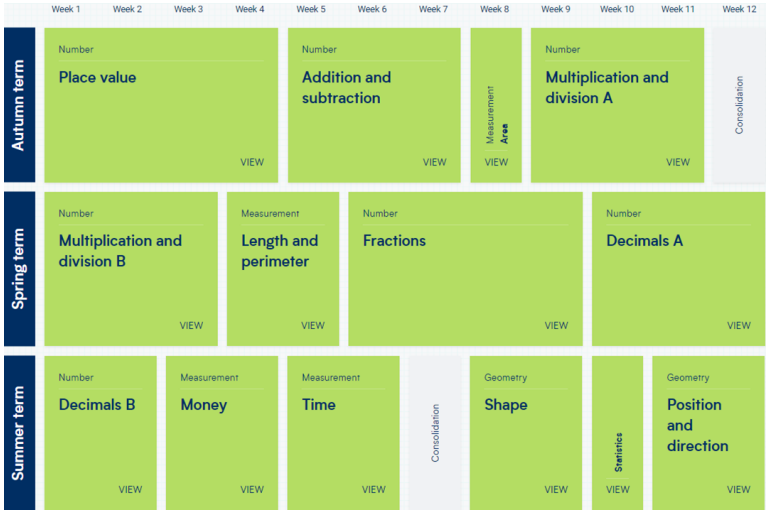
Year 2



Year 3



Year 4



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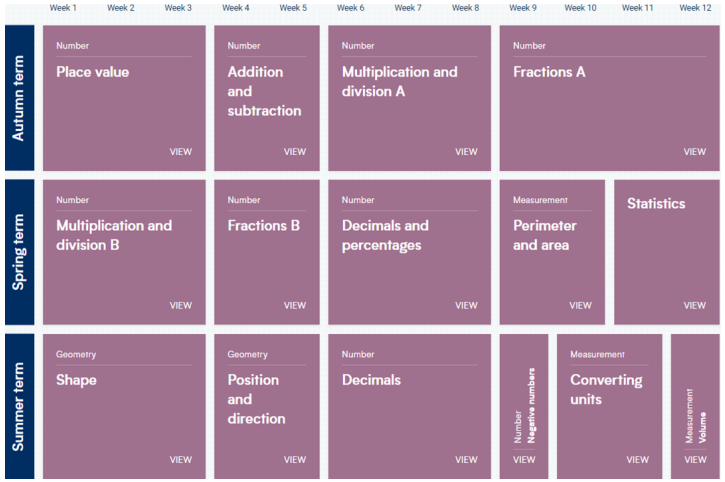
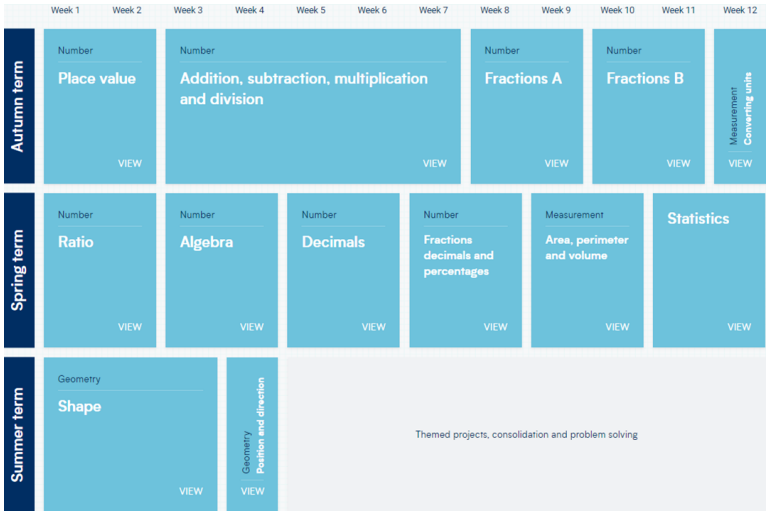
Year 5



Year 6



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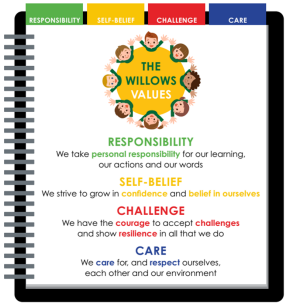

Knowledge and Skills Prior to KS1 - MATHS in EYFS

RECEPTION VOCABULARY

NUMBER - NUMBER AND PLACE-VALUE	ADDITION AND SUBTRACTION	MULTIPLICATION AND DIVISION	MEASUREMENT (MEASURE AND LENGTH)	MEASUREMENT (HEIGHT, WEIGHT AND CAPACITY)	MEASUREMENT (TIME)	GEOMETRY - PROPERTIES OF SHAPE	GEOMETRY - POSITION AND DIRECTION
count	add	double	measure	height	time	2-d shapes	over
subitise	plus	half	wide(er)	long(er)/short(er)	quicker	rectangle	under
order/ordinal	altogether	twice as many	narrow(er)	tall(er)/short(er)	slower	square	between
compare	total	equal	compare	weight	earlier	circle	around
forwards	take away /minus	unequal	long(er)(est)	capacity	later	triangle	through
backwards	number bonds	share	short(er)(est)	heavy/light	before	characteristics	on
numerals	part	group	length	heavier than	after	3-d shapes	into
digit	whole	odd		lighter than	first	cuboids	next to
one more	digit	even		big/bigger/biggest	next	cubes	behind
one less				full/empty	today	cone	beneath
equal to				more than	yesterday	spheres	order
more than				less than	tomorrow	curved	repeat
less than (fewer)				half/half full	morning	straight	patterns
					afternoon	flat	on top of

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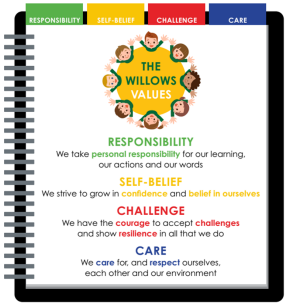

					evening		
					day		
					week		
					hour		
					minutes		

Skills and Knowledge Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Refer to Appendix 1 taken from the White Rose Maths Scheme					

Key Vocabulary Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NUMBER - NUMBER AND PLACE VALUE	sort	count in steps	ascending	negative numbers	ten thousands	millions
	represent	count in multiples	descending	roman numerals	one hundred thousands	ten millions
	multiples	place value	10 or 100 more	1000 more	powers of	
	partitioning	estimate	10 or 100 less	1000 less	integer	

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	ones	compare	hundreds	thousands		
	tens			round		
ADDITION AND SUBTRACTION	addition/add	sum	column addition	4-digit number		
	subtraction	3-digit number	column subtraction	operations		
	difference	commutative	exchange	methods		
	equals		estimate			
	facts					
	problems					
	missing number problems					
	2-digit number					
	inverse					
MULTIPLICATION AND DIVISION	multiplication	multiplication tables	exchange	factor pairs	multiples	multi-digit numbers
	division	commutative	mathematical statements	formal written layout	factors	long division
	arrays	repeated addition	missing number problems	distributive law	prime numbers	
			integer scaling problems	remainders	square numbers	
			correspondence problems		cube numbers	
			derived facts		short division	

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					product	
					dividend	
					divisor	
					quotient	
					operations	
FRACTIONS / DECIMALS / PERCENTAGES	whole	three quarters	tenths	decimal equivalence	fifth	
	half	third		hundredths	thousandths	
	quarter	equivalent fractions		convert	mixed numbers	
	equal parts	unit fractions		proper fractions	per cent %	
		non unit fractions		improper fractions	factors	
		numerator		decimal point	integer	
		denominator			complements	
		one whole				
RATIO AND PRORORTION						relative size
						missing values
						integer multiplication
						percentages

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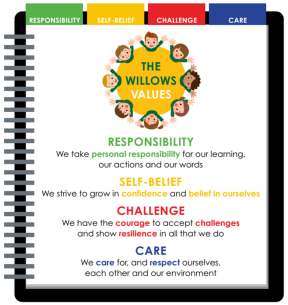

						scale factor
						unequal sharing & grouping
ALGEBRA						formulae
						linear number sequences
						algebraically
						equation
						unknowns
						combinations
						variables
MEASUREMENT (MEASURE AND LENGTH)	compare	standard units	millimetre mm	kilometres km	decimal notation	conversion
		estimate	perimeter	rectilinear figure	scaling	miles
		order		area	metric units	formulae
		record results			imperial units	parallelograms
		centimetre cm			inches	triangles
		metre m			compound shape	feet
					irregular shapes	
					square centimetres	

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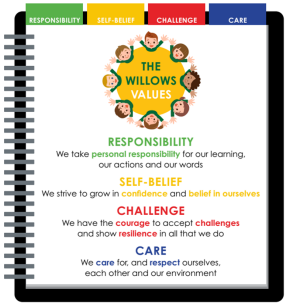

					square metres	
MEASUREMENT (WEIGHT AND CAPACITY)	mass	kilogram kg			cubic centimetre	cubic metre
	volume	gram g			pounds	cubic millimetre
		quarter full			pints	cubic kilometre
		three quarters full				gallons
		litres l				stones
		millilitres ml				ounces
		temperature				
		Celsius				
MEASUREMENT (TIME)	chronological order	intervals of time	analogue clock	convert		
	days of the week	quarter past/to	roman numerals			
	months of the year	duration	12-hour clock			
	month		24-hour clock			
	year		a.m./p.m.			
	o'clock		noon			
	half past		midnight			
	second		leap year			

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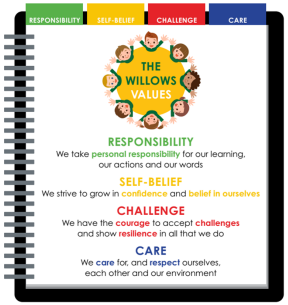

			digital			
MEASUREMENT (MONEY)	money	value				
	coins	change				
	notes					
	pounds £					
	pence p					
GEOMETRY - PROPERTIES OF SHAPE 1	sides	pentagon	right-angle triangle	isosceles	regular polygon	radius
	corners	hexagon	heptagon	equilateral	irregular polygon	diameter
	properties	line of symmetry	octagon	scalene		circumference
	pyramids	properties	polygon	trapezium		dimensions
	faces	cylinder	properties	rhombus		
		edges	prism	parallelogram		
		vertices		kite		
		vertex		geometric shapes		
				quadrilaterals		
GEOMETRY - PROPERTIES OF SHAPE 2			orientations		reflex angles	

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			angles		degrees	
			acute angle		one whole turn	
			obtuse angle		angles on straight line	
			turn		angles around a point	
			right angles		vertically opposite	
			half turn		missing angles	
			three quarters of a turn			
			greater than right angle			
			less than right angle			
			horizontal lines			
			vertical lines			
			perpendicular lines			
			parallel lines			
GEOMETRY - POSITION AND DIRECTION	position	clockwise/anti-clockwise		co-ordinates	reflection	four quadrants
	direction	straight line		first quadrant		co-ordinate plane
	movement	rotation		grid		
	whole turn	arrange		translation		

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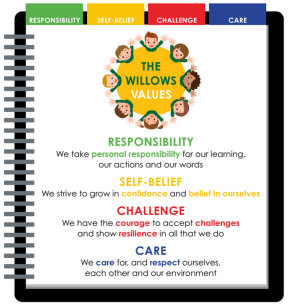

	quarter turn	sequences		plot		
	half turn			polygon		
	three-quarter turn			axis		
STATISTICS		pictograms	table	time graph	timetable	pie chart
		tally chart	bar chart	discrete data	two-way tables	mean
		block diagram	one-step problem	continuous data		
		category	two-step problem	line graph		
		sorting		comparison problem		
		totalling		sum problem		
		comparing		difference problem		
		horizontal		calculate		
		vertical		interpret		

IMPACT

- Most children reach end of year expectations.
- Most children achieve at least 3 points progress (according to the school's tracking system) from the previous year.
- Well planned sequences of learning **support** and **challenge** children to develop, refine and extend their maths skills.
- Children are able to independently apply their knowledge to a range of increasingly complex problems.
- Children are reasoning with increased **confidence** and accuracy.

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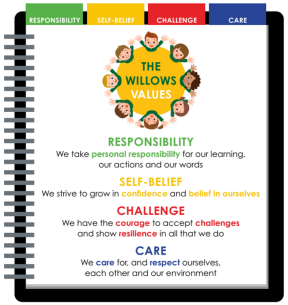

- ***Children enjoy maths!***