## Reception Class: Mathematics – We follow the White Rose Scheme of Learning in line with the whole school (identified in purple below)



Intent / Educational Programme: Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and ten-frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Skills & Knowledge						
	Number & Numerical Patterns	Shape & Measure				
<ul> <li>Develop the key skil</li> </ul>	ls of counting objects including saying the numbers in order and matching one number name to each item.	<ul> <li>Provide high-quality pattern and building sets, including pattern blocks,</li> </ul>				
<ul> <li>Say how many there</li> </ul>	are after counting – for example, "6, 7, 8. There are 8 balls" – to help children appreciate that the last number of the count indicates	tangrams, building blocks and magnetic construction tiles, as well as				
the total number of	the group. This is the cardinal counting principle.	found materials.				
<ul> <li>Say how many there</li> </ul>	might be before you count to give a purpose to counting: "I think there are about 8. Shall we count to see?"	Challenge children to copy increasingly complex 2D pictures and patterns				
Count out a smaller	number from a larger group: "Give me seven" Knowing when to stop shows that children understand the cardinal principle.	with these 3D resources, guided by knowledge of learning trajectories: "I				
Build counting into	everyday routines such as register time, tidying up, lining up or counting out pieces of fruit at snack time.	bet you can't add an arch to that," or "Maybe tomorrow someone will build a staircase "				
Sing counting songs	and number rhymes and read stories that involve counting.	Duilu a Stall Case.				
Play games which in	volve counting.	<ul> <li>Teach children to solve a range of jigsaws of increasing challenge.</li> <li>Investigate how shapes can be combined to make new shapes; for</li> </ul>				
Identify children wh	o have had less prior experience of counting and provide additional opportunities for counting practice.	example, two triangles can be put together to make a square. Encourage children to prodict what change they will make when paper is folded				
Show small quantiti	es in familiar patterns (for example, dice) and random arrangements.					
<ul> <li>Play games which in</li> <li>Put phiosts into fine</li> </ul>	voive quickly revealing and hiding numbers of objects.	Wonder aloud how many ways there are to make a hexagon with pattern				
Put objects into rive	frames and then ten trames to begin to familiarise children with the tens structure of the number system.	blocks.				
• Prompt children to s there must be 4." Co	subitise first when enumerating groups of up to 4 or 5 objects: "I don't think we need to count those. They are in a square shape so bunt to check.	• Find 2D shapes within 3D shapes, including through printing or shadow				
• Encourage children	to show a number of fingers 'all at once', without counting.	play.				
• Display numerals in	order alongside dot quantities or tens frame arrangements.	<ul> <li>Make patterns with varying rules (including AB, ABB and ABBC) and</li> </ul>				
Play card games suc	h as snap or matching pairs with cards where some have numerals, and some have dot arrangements.	objects and invite children to continue the pattern.				
• Discuss the differen	: ways children might record quantities (for example, scores in games), such as tallies, dots and using numeral cards.	Make a deliberate mistake and discuss how to fix it.				
<ul> <li>Count verbally beyo</li> </ul>	nd 20, pausing at each multiple of 10 to draw out the structure, for instance when playing hide and seek, or to time children getting	Model comparative language using 'than' and encourage children to use				
ready.		this vocabulary. For example: This is neavier than that.				
<ul> <li>Provide images such</li> </ul>	as number tracks, calendars and hundred squares indoors and out, including painted on the ground, so children become familiar with	Ask children to make and lest predictions. What if we pour the jugidi into the teapot? Which holds more?"				
two-digit numbers a	nd can start to spot patterns within them.	the teapot: which holds hole:				
<ul> <li>Provide collections t</li> </ul>	o compare, starting with a very different number of things. Include more small things and fewer large things, spread them out and					
bunch them up, to c	raw attention to the number not the size of things or the space they take up. Include groups where the number of items is the same.					
Use vocabulary: 'mo	re than', 'less than', 'fewer', 'the same as', 'equal to'. Encourage children to use these words as well.					
<ul> <li>Distribute items even discussion.</li> </ul>	nly, for example: "Put 3 in each bag," or give the same number of pieces of fruit to each child. Make deliberate mistakes to provoke					
<ul> <li>Tell a story about a</li> </ul>	character distributing snacks unfairly and invite children to make sure everyone has the same.					
<ul> <li>Make predictions at</li> </ul>	out what the outcome will be in stories, rhymes and songs if one is added, or if one is taken away.					
<ul> <li>Provide 'staircase' p</li> </ul>	atterns which show that the next counting number includes the previous number plus one.					
<ul> <li>Focus on composition</li> </ul>	n of 2, 3, 4 and 5 before moving onto larger numbers					
<ul> <li>Provide a range of v frame images.</li> </ul>	• Provide a range of visual models of numbers: for example, six as double three on dice, or the fingers on one hand and one more, or as four and two with ten frame images					
Model conceptual s	ubitising: "Well, there are three here and three here, so there must be six."					
• Emphasise the parts within the whole: "There were 8 eggs in the incubator. Two have hatched and 6 have not yet hatched."						
• Plan games which involve partitioning and recombining sets. For example, throw 5 beanbags, aiming for a hoop. How many go in and how many don't?						
• Have a sustained focus on each number to and within 5. Make visual and practical displays in the classroom showing the different ways of making numbers						
to 5 so that children can refer to these.						
<ul> <li>Help children to learn number bonds through lots of hands-on experiences of partitioning and combining numbers in different contexts, and seeing</li> </ul>						
subitising patterns.						
Introduce and use Stem sentences which will support current and future learning.						
Development	Count objects, actions and sounds.					
Matters	Subitise.					





	• Link the number symbol (numeral) with its cardinal number value.							
	count beyond ten.							
	Compare numbers.	ompare numbers.						
	• Understand the 'one more than/one less than' relationship between consec	nderstand the 'one more than/one less than' relationship between consecutive numbers.						
	<ul> <li>Automatically recall number bonds for numbers 0–5 and some to 10.</li> </ul>	utomatically recall number bonds for numbers 0–5 and some to 10.						
	<ul> <li>Select, rotate and manipulate shapes to develop spatial reasoning skills.</li> </ul>							
	• Compose and decompose shapes so that children recognise a shape can hav	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.						
	<ul> <li>Continue, copy and create repeating patterns.</li> </ul>							
	<ul> <li>Compare length, weight and capacity.</li> </ul>	Compare length, weight and capacity.						
Assessment	Number	Numerical Patterns	Shape					
	<ul> <li>Count verbally beyond 5. / Count verbally beyond 10. / Count verbally beyond 20.</li> </ul>	• Understand the odd and even pattern of numbers up to 10.	Can talk about some common 2D shapes using informal and mathematical language.					
	Accurately count items to 5 with one-to-one correspondence / Accurately	• Explore how quantities can be distributed equally	Can talk about some common 3D shapes using informal and					
count items to 10 with one-to-one correspondence		within numbers up to 10.	mathematical language.					
Correctly count sounds and actions, as well as objects.		• Explore the pattern of double facts to 10.	• Can select shapes appropriately for tasks.					
• Show a secure understanding of the 'cardinal principle' (knows the last		P P	Combine shapes to make new ones.					
number reached when counting tells you the total).			<ul> <li>Understand that shapes can be decomposed into smaller ones within</li> </ul>					
• Subitise up to 3. / Subitise up to 5.			them.					
	• Show 'finger numbers' up to 5.		<ul> <li>Explore shapes and spatial awareness by rotating and manipulating</li> </ul>					
	• Link numeral to amounts up to 5. / Link numeral to amounts up to 10.		shapes.					
	<ul> <li>Can use 'more than' and 'fewer than' to compare quantities.</li> </ul>		Understand positional language. / Use positional language.					
	• Can compare quantities up to 10 and say whether one is greater than, less		• Describe and discuss a route.					
	than or the same as the other.		I alk about patterns in the environment using informal language.					
	<ul> <li>Understand 'one more than/one less than'.</li> </ul>		Continue a simple AB pattern. / Copy and create a simple AB pattern.					
	<ul> <li>Solve real-life maths problems with numbers up to 5.</li> </ul>		Continue and convia more complex pattern e.g. APC APP APPC / Create					
	<ul> <li>Know the total of a larger set by subitising the groups within it and</li> </ul>		a more complex pattern / Notice and correct an error in a more complex					
	immediately combining them to find the total (conceptual subitising).		nattern					
	<ul> <li>Demonstrate an understanding of the composition of numbers to 5. /</li> </ul>		Make direct comparisons between objects relating to size, length, weight					
	Demonstrate an understanding of the composition of numbers to 10.		& capacity.					
	<ul> <li>Automatically recall number bonds to 5. / Automatically recall some</li> </ul>		• Can describe a sequence of events.					
	number bonds to 10.							
	• Apply knowledge of number bonds to recall some subtraction facts to 5.							
Vocabulary – See Wi	hite Rose Maths scheme							
Number - Children a	Have a deep understanding of number to 10, including the composition	of each number;						
the expected level of	<ul> <li>Subitise (recognise quantities without counting) up to 5;</li> </ul>							
development will:	<ul> <li>Automatically recall (without reference to rhymes, counting or other aid</li> </ul>	• Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.						
Numerical Patterns -	Verbally count beyond 20, recognising the pattern of the counting syste	m;						
Children at the	Compare quantities up to 10 in different contexts, recognising when one	e quantity is greater than, less than or the same as the othe	er quantity;					
expected level of	• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.							
development will:								





Term 1		Term 2			
Week 1/2/3	Week 4/5/6	Week 1/2/3	Week 4/5/6		
Getting to know you	Just like me!	It's me 1 2 3!	Light and dark		
Opportunities for settling in and getting to know	Match and sort	Representing 1.2 and 3	Representing numbers to 5		
the children	Compare amounts	Comparing 1.2 and 3	One more and less		
the children.	Compare size, mass and capacity	Comparing 12 and 3	Shanos with 4 sides		
Key times of the day, class routines. Furlaring CD	Compare size, mass and capacity	Composition of 12 and 3	Sindpes with 4 sides		
Key times of the day, class routines. Exploring CP. Exploring pattern			lime		
Where do things belong? Positional language.	• Subitising by showing small quantities in		• Count objects, actions and sounds through building counting into the		
Baseline Assessments	familiar patterns, such as on a dice when	<ul> <li>Count objects, actions and sounds through</li> </ul>	daily routine		
	playing games & showing number on fingers	singing songs and rhymes, playing counting	Subitising (on going)		
	without counting.(on going )	games & counting a smaller number from a	• Link the number symbol (numeral) with its cardinal number value.(or		
	<ul> <li>Comparing numbers using vocab more than</li> </ul>	larger group of objects. (on going)	going)		
	and fewer than, the same as, equal to by	<ul> <li>Subitising through recognition of amounts in a</li> </ul>	Compare numbers (on going)		
	providing collections.(on going)	Numicon piece and on a 5 frame (on going)	<ul> <li>Understand the 'one more than/one less than' relationship between</li> </ul>		
	Continue conv and create repeating natterns	• Link the number symbol (numeral) with its	consecutive numbers through making predictions in stories, rhymos 8		
	using the rule AB and ABB (on going)	cardinal number value through observation of	consecutive numbers through making predictions in stones, mymes &		
	using the rule AD and ADD(on going)	class displays, math's games & recording in	songs if one is added of taken away. (of going)		
		different wave (on going)	• Explore the composition of numbers to 10 focus on 2,3,4,& 5 using		
		unterent ways.(on going)	visual models on a dice, fingers, Numicon pieces etc.(on going)		
		<ul> <li>Compare numbers using vocab more than and</li> </ul>	<ul> <li>Select, rotate and manipulate shapes to develop spatial reasoning</li> </ul>		
		fewer than, the same as, equal to by providing	skills through construction and puzzles(on going)		
		collections. (on going )			
		<ul> <li>Select, rotate and manipulate shapes to develop</li> </ul>			
		spatial reasoning skills through construction and			
		puzzles. (CP)			
		• Explore the composition of numbers, focus on 2			
		& 3 using visual models on a dice, fingers.			
		Numicon pieces etc. (on going)			
Terr	n 3	Term /			
Week 1/2/3	Week 4/5/6	Week 1/2/3	Week 4/5/6/		
Alive in 5!	Growing 6 7 8	Building 9 and 10	(Suggested Consolidation)		
Introducing zero	678	9 and 10	To 20 and beyond		
Comparing numbers to 5	Making pairs	Comparing numbers to 10	Building numbers beyond 10		
Composition of 4 and 5	Combining 2 groups	Bonds to 10	Counting patterns beyond 10		
Compare mass	Length and Height	3D Shape	Spatial Reasoning		
Compare capacity	Time	Pattern	Match, Rotate, Manipulate		
Count objects, actions and sounds, saving	• Count objects, actions and sounds, say how	<ul> <li>Count objects, actions and sounds (on going)</li> </ul>	Count objects, actions and sounds, (on going)		
how many there are after counting to show	many there might be before counting	<ul> <li>Subitising (on going)</li> </ul>	<ul> <li>Link the number symbol (numeral) with its cardinal number value (on</li> </ul>		
last number indicates the total (on going)	giving purpose to counting (on going)	<ul> <li>Link the number symbol (numoral) with its</li> </ul>	going)		
Subitising (on going )	Subitising (on going)	cardinal number value. (on going )	• Count beyond $10 - yorbally to 20 and beyond neursing at each 10$		
Junk the number symbol (numeral) with the	Jubitishing (on going)		Count beyond to - verbany to zo and beyond pausing at each to.     Provide images such as number tracks and 100 square (on same)		
Link the number symbol (numeral) with its	Link the number symbol (numeral) with its	Compare numbers .(on going)	Converse and the second structure (lacks allo 100 square .(on going)		
cardinal number value.(on going)	cardinal number value.(on going)	<ul> <li>Understand the 'one more than/one less</li> </ul>	Compare numbers (on going)		
Compare numbers (on going)	Compare numbers (on going)	than' relationship between consecutive	Understand the 'one more than/one less than' relationship between		
Understand the 'one more than/one less	Understand the 'one more than/one less	numbers (on going)	consecutive numbers. (on going)		
than' relationship between consecutive	than' relationship between consecutive	<ul> <li>Explore the composition of numbers to 10</li> </ul>	Automatically recall number bonds for numbers 0-5 and some to 10.		
numbers.(on going)	numbers.(on going)	.(on going)	(on going)		
• Explore the composition of numbers to	• Explore the composition of numbers to 10	<ul> <li>Automatically recall number bonds for</li> </ul>	Continue, copy and create repeating patterns. (on going)		
10.(on goingP)	introducing a tens frame and beginning to	numbers 0-5 and some to 10.through	Select, rotate and manipulate shapes to develop spatial reasoning		
Automatically recall number bonds for	notice how many spaces there are left	spotting and using opportunities for children	skills (on going)		
numbers ()-5 through lots of hands on	when placing 6, 7 & 8 counters (on going)	to apply their number bonds			
numbers 0-5 through lots of hands on	when placing 6, 7 & 8 counters (on going)	to apply their number bonds			

## Reception Class: Mathematics – We follow the White Rose Scheme of Learning in line with the whole school (identified in purple below)



•	numbers and using 5 frames to notice the spaces. Compare weight and capacity through modelling comparative language (on going)	<ul> <li>Automatically recall number bonds for numbers 0-5 and some to 10 through lots of hands on experiences of partitioning and combining numbers.</li> <li>Compare length through modelling comparative language (on going)</li> </ul>	<ul> <li>Continue, copy and create repeating patterns ABB &amp; ABBC, making deliberate mistakes for the children to spot.</li> <li>Select, rotate and manipulate shapes to develop spatial reasoning skills through copying increasingly complex "pictures and patterns with 3D resources.</li> </ul>		
	lerr	n 5		Term 6	
	Week 1/2/3	Week 4/5/6	On the move	C	Consolidation
	First, then, now	Find my pattern	Deepening understanding		
Add	ding more	Doubling	Patterns and relationships		
Tak	ting away	Sharing and Grouping	Spatial Reasoning		
Spa	itial Reasoning	Even and Odd	Mapping		
Cor	npose and Decompose	Spatial Reasoning	ELG Number		
•	Count objects, actions and sounds. (on	Visualise and Build	Have a deep understanding of number to 10,		
	going)	ELG Number	including the composition of each number.		
•	Link the number symbol (numeral) with its	<ul> <li>Have a deep understanding of number to 10,</li> </ul>	<ul> <li>Subitise (recognise quantities without counting)</li> </ul>		
	cardinal number value. (on going)	including the composition of each number.	up to 5.		
•	Count beyond 10 (on going)	<ul> <li>Subitise (recognise quantities without</li> </ul>	<ul> <li>Automatically recall (without reference to</li> </ul>		
٠	Compare numbers (on going)	counting) up to 5.	rhymes, counting or other aids) number bonds		
•	Understand the 'one more than/one less	<ul> <li>Automatically recall (without reference to</li> </ul>	up to 5 (including subtraction facts) and some		
	than' relationship between consecutive	rhymes, counting or other aids) number bonds	number bonds to 10, including double facts.		
	numbers. (on going )	up to 5 (including subtraction facts) and some	ELG Numerical Patterns		
•	Automatically recall number bonds for	number bonds to 10, including double facts.	<ul> <li>Verbally count beyond 20, recognising the</li> </ul>		
	numbers 0-5 and some to 10. (on going)	ELG Numerical Patterns	pattern of the counting system.		
•	Continue, copy and create repeating	<ul> <li>Verbally count beyond 20, recognising the</li> </ul>	<ul> <li>Compare quantities up to 10 in different</li> </ul>		
	patterns. (on going)	pattern of the counting system.	contexts, recognising when one quantity is		
•	Select, rotate and manipulate shapes to	Compare quantities up to 10 in different	greater than, less than or the same as the other		
	develop spatial reasoning skills. (on going)	contexts, recognising when one quantity is	quantity.		
•	Compose and decompose shapes so that	greater than, less than or the same as the	<ul> <li>Explore and represent patterns within numbers</li> </ul>		
	children recognise a shape can have other	other quantity.	up to 10, including evens and odds, double facts		
	shapes within it, just as numbers can(on	<ul> <li>Explore and represent patterns within numbers</li> </ul>	and how quantities can be distributed equally.		
	going)	up to 10, including evens and odds, double			
		facts and how quantities can be distributed			
1		equally.			