ROCKWOOD NURSERY SCHOOL

MATHEMATICAL DEVELOPMENT SEQUENCED CURRICULUM – 2-4 YEAR OLDS

At Rockwood, we aim for children to grasp number and become familiar with shapes, space and measure

ASPECT	HEDGEHOG ROOM – 2 – 3 YEAR OLDS – PROGRESSIONS IN KNOWLEDGE, SKILLS AND UNDERSTANDING		
	Autumn/ Term 1	**Spring / Term 2**	**Summer / Term 3**
NUMBER Cardinality and Counting (The quantity of things) INTENT I know…	• How to use random numbers in play • How to say some counting words randomly • How to request items using maths vocabulary e.g. "I want one" "More" • How to elevate my hand showing awareness that adults demonstrate numbers on their fingers. • How to explore many different objects alongside an adult to understand the term "more" and to recognise when there is zero. • How to use simple mathematical vocabulary to describe amounts. For example, lots, more, I've got some, random number names. • How to share objects within a group for example giving the milk to every child in the group so that each child has 1 and recognising if more is needed.	• How to say some number names • I enjoy number rhymes and am beginning to represent numbers with fingers • I listen intently to adults as they count. • How to respond to an adult when they say "please can I have another one?" or "some more" within play. • That you start to count from number 1. • How to solve simple number problems.	• How to recognise who has more or less • How to show finger numbers to 3 • I am developing counting like behaviour such as making sounds, pointing or saying some numbers in sequence • How to use a range of resources to represent numbers • How to use number names when attempting to count different objects. • How to join in with singing number rhymes and songs • How to play and respond to games such as 1,2,3 go!
Comparison (Knowing which numbers are worth more than others) **Composition** (Understanding that 1 number can be made up from 2 or more smaller numbers) **Sorting** INTENT	• How to explore and investigate collections of objects which can be separated and placed in different containers. • How to recognise who has more or less than them within play.	• How to use the word 'more' in play. • Explores different quantities and amounts • that items in the home corner contain different amounts. • How to join in with number songs and rhymes. • How to arrange and sort toys into different locations, for	• How to count groups of things e.g. girls/boys/all. • How to sort a group of objects into two different containers using different criteria e.g. colour, shape, number.

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I know…		examples the small world animals in a toy zoo.	
NUMERICAL PATTERNS INTENT I know…	• How to explore different sized and shaped objects • How to build with a range of resources that develop spacial awareness e.g. simple inset jigsaws, stacking blocks • How to play with resources that are grouped together despite their size being different. (a big cup and a small cup when sharing a pot of tea)	• How to explore containers of different sizes, types and shapes, filling and emptying • I am attempting, sometimes successfully, to fit shapes into inset puzzles or jigsaws • How to use simple shape vocabulary but not necessarily correctly identify the shape • How to follow basic daily routines	• I am beginning to use colour and shape vocabulary • I am beginning to sort objects by shapes and colours • How to investigate fitting myself inside and moving through spaces • That there are some simple shapes and patterns in pictures
Pattern INTENT I know…	• How to explore and make patterns with different objects. • How to make a collection using a range of different 'loose parts' objects. • How to notice when things are the same and when things are different. • How to position different objects with a purpose in mind. • How to participate in the pattern and routines of the day.	• How the same object can also have differences. For example, tigers both have stripes but one is larger than the other. • How to match items with the same pattern. For example, a pair of socks.	• How to use words to describe the patterns they see. • And will anticipate the routine of the day and talk about what is going to happen next. • How to group objects according to their properties.
Shape and Space INTENT I know…	• How to explore objects; particularly to filling and emptying. • How to make arrangements with objects and fitting objects into spaces	• How to build with a purpose. • How to complete a simple jigsaw.	• And will notice simple shapes in the environment. • How to and will build for a sustained amount of time.

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		• How to arrange objects with more of a purpose.	
Measure INTENT I know…	• How to identify 'big' and 'little' • How to explore and investigate resources which are different lengths. • Use resources in the sand and water to explore and investigate filling and emptying. • Build and construct models using wooden bricks which are different sizes. • How to and will, take part in the daily routine with an adult supporting them.	• How to compare two different items and observe differences between two objects, such as something very tall / small. • How to and will be able to follow the daily routine.	• How to measure ingredients for baking using scales with adult support. • And am able to, begin to name the day of the week correctly. • Building tall and short towers with blocks. • How to use language such as big and small to compare objects in play. • How to anticipate key times of the day e.g. lunch time and home time.

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IMPLEMENTATION We will…..	• Provide lots of opportunity for children to explore numbers in the environment, physical resources, books, pictures • Provide resources for children to explore a range of resources of different shapes and sizes. Introduce same/different, more/less. • Provide opportunity for the children to see objects that are visibly the same/different. • Encourage counting on fingers. • Staff to provide regular opportunities for children to hear number names through songs/rhymes • Model counting when building towers • Recite numbers daily, counting steps, children • Give opportunities to organise objects/resources in the environment. • Investigate shapes in the environment during play • Provide shape inset puzzles and jigsaws • Use water/sand areas to encourage filling and emptying containers and introduce vocabulary full and empty • Read stories which introduce size comparisons. Use the opportunity to introduce key vocabulary – small, big, smaller, • Continue to count and recite/sing numbers daily • Provide opportunities to explore more, less, many, few. • Play hide and seek • Model giving/finding the right number – 'Find me 1 dinosaur, 2 cars' etc • Play maths games which involve counting • Encourage children to explore collections they make, (leaves/sticks/stones etc) counting and comparing amounts. Who has more? • Provide opportunities for printing and pattern making in malleable and creative areas

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ASPECT	SQUIRREL AND OWL ROOMS – 3 – 4 YEAR OLDS – PROGRESSIONS IN KNOWLEDGE, SKILLS AND UNDERSTANDING			MORE ABLE CHILDREN – 4+	
	Autumn/ Term 1	**Spring / Term 2**	**Summer / Term 3**		
NUMBER Cardinality and Counting (The quantity of things) INTENT I know…	• I am beginning to show some correlation with counting • How to show finger numbers up to 3 • How to ensure that each peer has an item when sharing out. • Several counting rhymes and songs. • How to begin to represent quantities using their own marks or number symbols.	• How to recognise quantities of objects from 1-3 • I am beginning to show some correlation with counting • How to show finger numbers up to 3 • Several counting rhymes and songs. • How to discuss familiar routes • How to recognise numerals 1-3 • That when counting, the final number is the total to 3 • How to say number names in order to 5 • How to recognise some personal and significant numbers such as 3, if I am three years old. • How to respond when asked "How many?" • I am beginning to correctly count 1 or 2	• How to recognise quantities of objects from 1 – 5 • How to recognise numerals 1 – 5 • How to subitise 1, 2, 3 • How to show finger numbers to 5 • How to say number names in order to ten, but I may not be able to count the correct number of objects for each number name. • How to recognise different numbers in the environment. • I am beginning to count up to five objects, from a larger group correctly including counting objects that are	• How to explore vocabulary associated with calculation e.g. able to give someone one more, one less • That when sharing out I need another/have too many. • How to say numbers beyond ten. • How to say number names 10-0 in the correct order. • How to count a group of up to five objects and know that the final number is the total number for the set. • How to match a number symbol from 0-5 to a number of things.	• How to recognise, count and use numbers securely from 0 to 10 • How to recite numbers beyond 10 • I have a deep understanding of number to 0 to 5 then up to 10 • How to find the total of two groups by counting them all. • How to record an amount I have counted using the correct number symbol to number 5 • How to recognise the number symbols from 0 to 10 • How to order number symbols from 0 to 10 correctly. • How to recognise a missing number

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		objects from a larger group. • How to use my own marks to represent an amount. • How to use my fingers when counting.	not in a regular arrangement. • How to recognise that amounts have been rearranged but the amount is still the same if nothing is added to or taking away. • How to solve number problems; counting numbers to 5.	• And am beginning to say, what is one more and one less than a number to 5 using objects to support me. • How many are in a group without needing to count them all, for example reading a dice.	symbol from a set, for example 0,1,2,3,5 • How to solve number problems involving 10 objects.
Comparison (Knowing which numbers are worth more than others) **Composition** (Understanding that 1 number can be made up from 2 or more smaller numbers) **Sorting** INTENT I know…	• How to share out amounts in the role play area. • How to group items together comparing the amounts e.g. group of children going home at lunch time, number staying. • Several rhymes and songs which separate a number. For example, 5 little speckled frogs – some in the waters and some in the pond or 5 currant buns.	• What happens if more objects are added or some things are taken away, using simple terms to describe this. • How to begin to represent quantities using their own marks or number symbols. • How to ensure that each peer has an item when sharing out. • I can see and discuss smaller numbers within a larger group. E.g. in my treasure tub I have 3 green	• How to join in with number songs, realising that a group can change when things are added and taken away e.g. cheeky monkeys rhyme. • How to sing rhymes and songs which require a number to be partitioned. • How to and am beginning to count the number of objects in each set. For example,	• How to compare groups of objects noticing when they have more, less or the same. Counts to check how many in a group. • How to begin to investigate and talk about different ways to separate five objects, recognising that the number can be separated in different ways	• How to use language more and less to compare groups. • How to find one more or one less than a number to 10. • How to find a hidden number from a group of five through playing hiding games with a number of objects in a box, den etc. • How to make a reasonable guess at

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		pegs and two blue ones.	3 frogs on the log and 2 in the pond	but the total remains the same.	the number of hidden objects
NUMERICAL PATTERNS INTENT I know…	• I am beginning to sort and name some basic shapes and colours • How to "have a go" by showing an interest in patterns and talk about what I notice. • How to discuss familiar routes • How to select 2D shapes to represent objects – a circle face, a triangle roof.	• I am beginning to create a pattern using items in the environment • I am confident at naming colours and can mix primaries to make others. • How to use vocabulary to describe positions. • How to describe environmental patterns as "Spotty" etc	• How to use representative items e.g. money in role play • How to use vocabulary to describe size to compare using 'er' e.g. bigger, smaller • How to use vocabulary to describe size to compare using 'est' • I am beginning to subitise up to 3 • How to explain features of shapes "flat" "corner" etc • How to continue an ABAB pattern	• How to problem solve confidently – comparisons by e.g. size, weight, quantity, capacity • How to use vocabulary to describe size to compare using 'est' e.g. biggest, smallest, tallest • How to use basic ordinal vocabulary "First, next, now" • I may need to turn jigsaw pieces around to fit correctly	• How to recognise patterns within numbers • I am beginning to use vocabulary related to time "before, after that, later on, today, next week" • How to notice and correct errors in repeating patterns. • How to sort items confidently by shape, size or colour.

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Pattern INTENT I know…	• How to explore many resources and make a repeating pattern of two with adult support. (red, green) • How to make patterns using objects they find in the environment. • The children will make their own patterns using resources they find in the environment. • The children will confidently have a go at creating their own patterns.	• How to "have a go" by showing an interest in patterns and talk about what I notice. • Children listen to and copy a repeating pattern using sounds or actions. • Children will create a pattern which an adult has asked them to. For example, "Can you make a red, blue pattern" • Children make their own patterns using resources from the environment • Children will record their own pattern using pictures and/or symbols. • Children will know how to continue a repeating pattern of two which an adult has started.	• The children will record their own pattern using pictures and/or symbols. • Children will know how to continue a repeating pattern of two which an adult has started. • Children will know how to spot errors in a repeating pattern. • Children will use words to compare two different patterns.	• The children will make more complex repeating patterns. For example, red, red, green. • The children will use more language to describe the patterns they have made. • The children will check and fix a pattern if there is a problem.	• The children will choose their own rules for their pattern. • The children will ask a friend to copy a pattern they have made. • The children will continue a pattern which stops in the middle of the repeat. For example, red, red, green, red, red, green…

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Shape and Space INTENT I know…	• How to name simple shapes. • How to use shapes according to their properties e.g. a triangle for a roof. • How to understand positional language. • How to create pictures using 2D shapes.	• How to select 2D shapes to represent objects – a circle face, a triangle roof. • How to explain features of shapes "flat" "corner" etc • How to name 2D shapes. • I am beginning to sort and name some basic shapes and colours • I may need to turn jigsaw pieces around to fit correctly. • How to name simple shapes and discuss their properties.	• How to name 2D shapes. • And understand flat and solid. • How to use positional language. • How to talk about shapes they use whilst they are constructing.	• How to sort shapes according to their properties.	• How to name 2D and talk about the properties of 3D shapes. • How to select a named shape. • How to recreate models that they have seen. • How to use their knowledge of shape and space to build strong structures.

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Measure INTENT I know…	• How to compare lengths and heights of objects in the provision e.g. long and short snakes with the playdough. • How to show an understanding of full and empty when filling and emptying containers. • How to show an understanding of the word heavy. • How to role play with money (simply using a 1p coin as a counter.)	• Children show awareness that a clock tells us the time. • How to use vocabulary such as bigger, smaller, longer and shorter to make comparisons in terms of length.	• How to order items by length and height. • How to measure items using non-standard units e.g. blocks. • How to show an understanding of the language heavy and light. • How to understand language relating to time. • How to use language full, empty and half full.	• And have an understanding of distance. • How to show an understanding of what money is used for. • How to use language relating to time.	• How to order items by weight- heavy and light. • How to measure items using standard measurements e.g. a ruler and tape measure • How to use mathematical language to compare objects, weights and volumes. • How to solve problems relating to measure. • How to have an understanding of which resources measure time.

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IMPLEMENTATION We will…..	• Environments supports prepositions alongside WellComm • Children to explore numbers in the environment and a range of resources which are different shapes and sizes. • Provide opportunity for the children to discuss same/ different. • Encourage use of manipulatives to represent numbers. • Construction continuous provision enhancements • Outdoor den making and outdoor workshop area • Jigsaws out to play with and Pattern stimulus prompts to look at. • Pattern stimulus supporting heuristic play and pattern making. • Use Manipulatives and 5 frames for the children to demonstrate their grasp of 3. • Continuous provision includes Building blocks and construction sets for the children to talk about whilst they play. • Colour mixing – hand pump/powder /ready mix paint available to create own colours. • Adults model descriptive language through Sustained and shared play. • Musical instruments and body percussion support pattern making. • Outdoors to support natural exploration of pattern. • Ensure Building blocks and construction sets are available both indoors and outdoors allowing better size comparison. • Role Play area to include a till and coins (real and wooden representations) for children 'buy' items. • Measuring plants in the allotment supports length. • Large water and sand areas and baking opportunities support • knowledge of weight and capacity. • Planned activities such as baking biscuits whereby the children weigh out the ingredients. • Enhancement role play with patterns in clothing and workshop area. • Group time routines support days of the week; or number, or patterns. • Talk for writing supports sequence of events • Finger rhymes and playing games such as ready, steady, go. • Snack area comparing more and less • Continuous provision supports number across all areas of learning. • Dice games, games to support number sense. • Counting frames and number lines to support counting to 5. • Numbered bikes in the outdoors to support number recognition.

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