Mathematics

A Unique Child: what a child might be doing	Positive Relationships: what adults might do	Enabling Environments: what adults might provide
 RANGE 5 **Comparison** • Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. *You've got two, I've got two. Same!* **Counting** • May enjoy counting verbally as far as they can go • Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. • Uses some number names and number language within play, and may show fascination with large numbers • Begin to recognise numerals 0 to 10 **Cardinality** • Subitises one, two and three objects (without counting) • Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) • Links numerals with amounts up to 5 and maybe beyond • Explores using a range of their own marks and signs to which they ascribe mathematical meanings **Composition** • Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers • Beginning to use understanding of number to solve practical problems in play and meaningful activities • Beginning to recognise that each counting number is one more than the one before • Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same	• Encourage children to share items between two people or toys. • Capitalise on children's fascination with counting by joining in when they count in games. • Enjoy counting forwards and back (sometimes to much higher numbers). Use different voices, e.g. high or growly. • Use opportunities within daily routines to support children's developing sense of number. • Model and encourage counting and representing numbers within role play, e.g. making a telephone call using a list of numbers. • Value children's own mathematical representations within their pretend play. • When counting with children, playfully make deliberate mistakes for fun, expecting children to correct them. • Model writing numerals, e.g. on badges, birthday cards and banners. • When counting objects with children emphasise the cardinal principle: *1, 2, **3**, there are three cups.* • Invite children to count out a number of things from a larger group, e.g. *Can you get five crackers?* • Encourage children to use their fingers to show an amount e.g. when asking another child to share resources, to show on their fingers how many they need. • Emphasise the *one more, one less* pattern in rhymes and traditional tales, asking children to predict the next number. • Model wondering and talking about how you might solve a number problem. • Value and support children to use their own graphics when problem solving.	• Provide a numeral rich environment, e.g. in role-play areas, mud-kitchen recipes, numbers on trikes and toilet doors. • Provide numerals that children can pick up and use within all aspects of their play. • Provide resources indoors and outside for children to explore and talk about higher numbers. • Model using objects to illustrate counting songs, rhymes and number stories, sometimes using pictures and numerals, to enable children to use those resources independently. • Play with either dot or numeral dice. Discuss that six on the dice is worth more than four. • Provide a variety of mathematical picture books and share them as part of "warm and cuddly" maths times. • Explore different arrangements of the same number, e.g. partitioning five in different ways; hiding one group and "guessing" the hidden number. • Model counting items rhythmically, including objects into a container, claps or drumbeats. • Support children to choose how to arrange collections of two, three and four objects in different ways. • Provide spaces to display children's ongoing mathematical thinking, e.g. their own ways of representing their thinking, and scribing children's words.

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RANGE 5 (cont.)  **Spatial Awareness** • Responds to and uses language of position and direction • Predicts, moves and rotates objects to fit the space or create the shape they would like	• When children are exploring, use the language of position and direction in context (*in, on, inside, under, over,* progressing to *between, beside, next to through, along,* including relative terms which depend on where you are, e.g. *behind, in front of, forwards, backwards*) using equivalent terms for these in home languages through liaison with families where possible. • On walks, in pictures or while playing, point out how things or people that are far away look smaller. • Support children in their problem solving when they are creating rail tracks and road layouts. • In block play, sensitively support and challenge experienced builders to make bridges and enclosures. • Encourage children to persevere with jigsaws, perhaps demonstrating "hovering" jigsaw pieces to check if they will fit.	• Provide spaces to display children's ongoing mathematical thinking, e.g. their own ways of representing their thinking and scribing children's words. • Provide opportunities for children to explore position themselves *inside, behind, on top* and so on. • Provide picture books to stimulate discussion about position and direction. • Create trails and treasure hunts with the children. • Organise the indoor and outdoor environment with outlines for objects or specific places for children to tidy up items by fitting them into the designated space.
Shape • Chooses items based on their shape which are appropriate for the child's purpose • Responds to both informal language and common shape names • Shows awareness of shape similarities and differences between objects • Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes • Attempts to create arches and enclosures when building, using trial and improvement to select blocks	• Help children to choose shapes for a purpose, e.g. a triangular block for a roof and the wedge-shaped block for a ramp. • Offer an appropriate or inappropriate shape for what you think the child's purpose might be to investigate their thinking. • As children experience shapes, use informal language (e.g. *slanty, pointy, twisty, wiggly, bumpy*), common shape names (e.g. *cylinder, cone, circle, square*) and "nearly" shapes (e.g. *This is almost a square but it's got curvy corners*). Find out and use equivalent terms for shapes in home languages. • Discuss how shapes can be partitioned in everyday contexts, e.g. cutting food in different ways. • Value children's constructions and solutions to problems they have set themselves and talk about how the shapes have combined to make new shapes.	• Provide differently shaped resources to handle, carry, move and explore. • Provide large and small blocks and boxes for construction both indoors and outdoors.

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	A Unique Child: what a child might be doing	Positive Relationships: what adults might do	Enabling Environments: what adults might provide
RANGE 5 (cont.)	**Pattern** • Creates their own spatial patterns showing some organisation or regularity • Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC) • Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next	• Whilst playing alongside children, model simple repeating patterns of two or three items and encourage children to create and continue patterns. • Demonstrate arranging objects in spatial patterns when building, collaging or playing with loose parts. • Draw children's attention to patterns around them including from a range of cultures. • When making patterns, help children to solve problems.	• Provide a range of items for free exploration of patterning indoors and outdoors including natural materials, pattern blocks, loose parts, mats, trays and strips. • Encourage children to join in with body patterns or repeating sections of songs. • Pause to encourage prediction when enjoying stories and rhymes with repeating elements, sometimes using props. • Emphasise the repeating pattern when turn taking. • Provide patterned resources including those representing a range of cultures, such as clothing, fabrics or wrapping paper.
	Measures • In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items • Recalls a sequence of events in everyday life and stories	• During play, model comparing lengths and distances. • Look out for meaningful opportunities for children to compare by length, weight, capacity and time using comparative language (*longer/shorter, heavier/lighter, holds more/holds less, longer time/shorter time*). • Encourage children to participate in seesaw and balance scale play. • Encourage children to respond to and use words such as *before, after, soon* or *later* when talking about routines, recent events and events in a story or rhyme.	• Provide problem-solving opportunities indoors and outdoors for comparing length, weight and capacity, e.g. *Which is the best bottle so we'll have enough drink for everyone at the picnic?* • Ask children to predict *What happens next?* using visual timetables, books and stories. • Provide items that can be ordered by size, such as plates and clothes in role play.