National Day Nurseries Association

*Brighter thinking for early years

Maths Champions

Learning Trajectory
Composition

Range	**Unique Child:** What a child might be doing	**Positive Relationships:** what adults might do	**Enabling Environments:** what adults might provide
1	Reacts to changes of amount when those amounts are significant (more than double).	- Notice and mirror children's reactions to changes in amount. - Add to objects & draw attention to the change in amount, using words like more. - When feeding babies comment on whether they would like more after being winded, e.g. *Oh, you want more.* - Use feeding, changing and bathing times for finger-play with young babies	- Provide small groups of the same objects in treasure baskets, as well as single items.
2	May be aware of number names through their enjoyment of action rhymes and songs that relate to numbers. Looks for things which have moved out of sight.	- Take opportunities during play to sing number rhymes. - During personal care routines make a point of using numbers. - Play peek-a-boo hiding games with toys and people.	- Plan to sing number rhymes with actions. Involve families in sharing number rhymes from home cultures.
3	Uses number words, like one or two and sometimes responds accurately when asked to give one or two things.	-Talk with young children about lots, more and not many and not enough as they play. - Draw attention to contrasting differences and changes in amounts e.g. adding more bricks to a tower or eating things up. - Use number words in meaningful contexts, e.g. *Here is your other mitten. Now we have two.*	- Play hiding games so children notice that something has gone. - Provide varied sets of objects for playful opportunities for children to independently explore *lots, more, not many* and *not enough.*
4	In everyday situations, takes or gives two or three objects from a group. Beginning to count on their fingers.	-Encourage children to explore the collections they make, comparing amounts and counting some of the items, emphasising the last number, e.g. 1,2,3. There are 3 leaves. - Use opportunities to model and encourage counting on fingers. - When singing number rhymes with props, draw attention to contrasting differences and changes in numbers, checking together *How many now?* -Point out the number of things whenever possible, e.g. rather than just *chairs*, say *four chairs*. - Help children to give or get two or three items, e.g. during snack time help children to take two pieces of fruit.	-Provide buckets and bags for children to create collections of objects which they can count. - Provide opportunities for children to explore cardinality in the environment using self-correcting resources, e.g. jigsaw with two ducks and the number two, or displays showing the numeral and the number of items. -Sing counting songs and rhymes which help to develop children's understanding of number.
5	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.	- Encourage children to share items between two people or toys. - Use opportunities within daily routines to support children's developing sense of number. - Encourage children to use their fingers to show an amount. - 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.	- 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.

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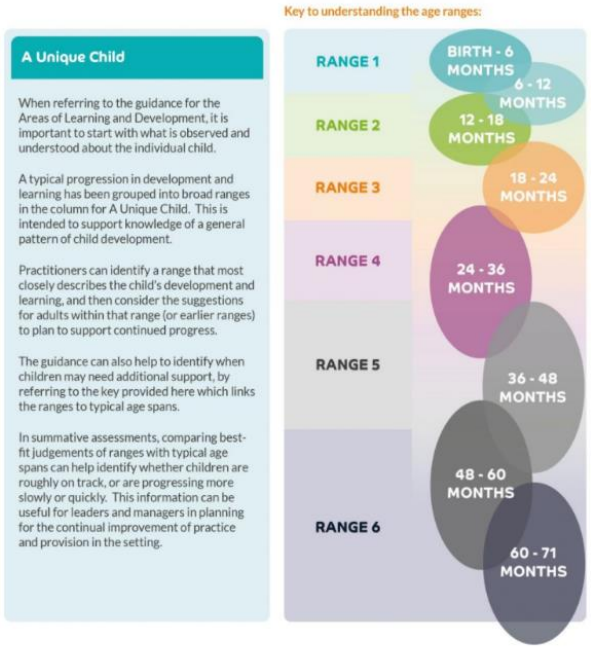
	Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.		partitioning five in different ways; hiding one group and "guessing" the hidden number. - Support children to choose how to arrange collections of two, three and four objects in different ways. - Provide spaces to display children's ongoing mathematical thinking, e.g. their own ways of representing their thinking, and scribing children's words.
6	Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three. In practical activities, adds one and subtracts one with numbers to 10. Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"	- Model comparing numbers in problems about fair shares. - Talk with children about the strategies they have used to solve a problem. - Spot opportunities to playfully pose composition problems for children to explore. -Encourage children to make predictions and visualise the outcome in stories, rhymes and songs if one (or two) is added or taken away. - Talk to children about the marks and signs they use to represent and communicate their thinking. As appropriate, model and discuss informal and standard ways (e.g. using arrows, plus and minus signs). - Begin to model calculations in mathematical stories and number rhymes and in real contexts, using a range of ways of representing (e.g. five-frames). Use both informal and standard ways to record these, including tallies and symbols. Discuss children's own graphical strategies to solve problems, using some vocabulary of addition and subtraction.	- When counting groups as part of routines, e.g. self-registration with ten-frames, dinner chart etc. record the final total as a label for children to see. - Subitise with children, talking about how they see numbers of things made up in a variety of arrangements (e.g. recognising odd and even numbers). - Provide resources to make "staircase" patterns which show that the next counting number includes the previous number plus one. - Display children's mathematical representations, including explanations of the children's meaning making.



Reference: Birth to 5 Matters – Non-statutory guidance for the Early Years Foundation Stage
www.birthto5matters.org.uk