



Sequence of learning progression in maths

“Helping every star to shine”



Number - Counting	Birth to 3				3 and 4 year olds				
	Learning and Progression Examples		Key Learning		Learning and Progression Examples		Key Learning		
	Distinguish between quantities, recognising when a group of objects is more than one	Show awareness of one-to-one correspondence through practical everyday experience	Counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence		Rote count from 1 to 5	Know the number names in order and distinguish each one	Understand that each object in the set requires a different number name	Synchronise the counting sequence with touching each object (one number name per object)	Say one number for each item in order: 1, 2, 3, 4, 5
Join in with number rhymes	Know that some of the words in number rhymes are numbers	Take part in finger rhymes with numbers		Count the number of fingers on one hand	Know that each hand has 5 fingers	Count and show the correct number of fingers for numbers up to 5		Show ‘finger numbers’ up to 5	
<i>There are no steps towards this expectation. Children need to be provided with situations in which finding a quantity is a meaningful task, e.g. There are only six people allowed at the painting table, how many are there now?</i> <i>At this stage, the children are not expected to answer this question but recognise that counting can help us find the answer.</i>		Understand that counting is to find out how many		Use one to one correspondence when counting		Count up to 5 objects emphasising the last number said (if children understand this concept with numbers up to 5 they will be able to use it with greater numbers)		Know the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle)	
Join in with number rhymes	Know that some of the words in number rhymes are numbers	Recognise and say numbers of personal significance		Count in everyday contexts, sometimes skipping numbers – ‘1-2-3-5’		Join in with rote counting from 1 to 5	Rote count from 1 to 5	Recite numbers past 5	
				Rote count from 1 to 5	Join in with rote counting back from 5 to 0	Rote count from 5 to 0		Rote count from 1 to 5	
Rote count from 1 to 3	Show awareness of one-to-one correspondence through practical everyday experience			Count up to 3 items, moving or touching them, in everyday contexts	Count up to 5 objects, moving or touching them, emphasising the last number said	Count up to 5 pictures, touching or marking as they are counted	Count up to 5 actions	Count reliably up to 5 in everyday contexts	
Know that number names describe quantities (how many)	Recognise when there is one item	Recognise when there is more than one item	Recognise when there are two items without counting	No equivalent birth to 3 example		Recognise familiar arrangements for numbers up to 5 when on a dice or domino	Identify quantities of objects up to 5 when placed in a dice or domino arrangement	Identify quantities of objects from 1 to 3 when arranged randomly	Fast recognition of up to 3 objects, without having to count them individually (subitising)
Compare two groups of the same object by matching objects together	Use the word ‘more’ to indicate the greater amount	Identify when groups of the same object have the same amount after objects have been matched		Compare amounts, saying ‘lots’, ‘more’ or ‘same’		Understand the last number said is the number in the set	Understand that objects can be counted in any order and the amount will be the same	Know that objects in a group can be rearranged without affecting the total	Understand and use conservation of number
				Use the words ‘same’ and ‘equal’ to ‘more’ indicate equivalence e.g.	Understand the relationship between and ‘fewer’, 4 is more than 3 so 3 is fewer than 4	Compare groups by the objects amounts, e.g.	Know that bigger objects do not indicate greater counting 2 footballs is a lesser amount than	Compare quantities using language: ‘more than’, ‘fewer than’	

					4 tennis balls	
	Recognise that a group of items can be identified using a number name/word	Recognise where there are no items (in a group) and use the word 'none'	No equivalent birth to 3 example	Join in with counting back rhymes using objects or fingers to represent how the numbers change	Know that when there are no objects this is represented by the word 'zero'	<i>Use the word 'zero' to represent 'none'</i>

	Children should apply their knowledge of counting in real life problems in the environment, including in daily routine			No equivalent birth to 3 example	Children should apply their knowledge of counting in real life problems in the environment, including in daily routines			Solve real world mathematical problems with numbers up to 5	
NumberSense	Birth to 3				3 and 4 year olds				
	Learning and Progression Examples			Key Learning	Learning and Progression Examples			Key Learning	
	Identify when groups of the same object have the same amount after objects have been matched			No equivalent birth to 3 example No equivalent birth to 3 example	Recognise when groups of the same size have been made using different pairs of smaller groups, e.g. a tower of 5 made from a tower of 2 and a tower of 3, and a tower of 5 made from a tower of 4 and a tower of 1	Partition a set of objects into two smaller groups		<i>Partition a set of objects in different ways</i> <i>Know that numbers greater than 1 can be made in different ways</i>	
Number Recognition	Know that numbers can be shown with symbols/numerals	Recognise numerals 1 and 2	Recognise numerals 0 and 3	No equivalent birth to 3 example	Recognise numerals 0 to 5	Identify a given number from a selection within the range 0 to 5	Recognise numerals 6 to 10	Identify a given number from a selection within the range 0 to 10	Recognise and identify numerals 0 to 10
	Rote count from 1 to 3		Show awareness of one-to-one correspondence through practical everyday experience	No equivalent birth to 3 example	Count objects moving each as they are counted	Select the numeral to match amounts from 0 to 5 when in order	Select the numeral to match amounts from 0 to 5 when randomly arranged	Select the numeral to match amounts from a selection within 0 to 5, e.g. 3, 2 and 5	Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5
Number Graphics	Knows that the marks they make are of value	Recognises that marks made by others have meaning	Makes marks for a purpose and can explain them	Represent and explain their thinking in their own ways	Represent a given amount up to 10 using objects	Represent a given amount up to 10 using own marks and symbols	Explain what their marks and symbols represent	Begin to represent amounts from 0 to 5 using numerals	Experiment with their own symbols and marks as well as numerals
	Reacts to significant changes in amounts (double the amount)	Identifies when a group has become more or less when items are added or removed	Uses the words more and less to describe the change to an amount	React to changes of amount in a group of up to three items	Count up to 5 objects, moving each as they are counted	Understand the concept of addition as combining sets of objects	Know that one more is found by adding one object to an existing group of objects	Recognise that one more is the next number in the counting sequence (when counting in ones)	In real life contexts find one more and one less than a given number
					Count up to 5 objects, moving each as they are counted	Understand the concept of subtraction as removing one amount from within another	Know that one fewer (one less) is found by removing / taking away one object from an existing group	Describe the number that is one fewer (one less) than one as zero and show this practically	

Number - Calculating	Reacts to significant changes in amounts (double the amount)	Identifies that a group has more when items have been added	Uses the word more to describe the change to an amount when items are added		<i>In real life contexts find one more than a given number</i>			Combine two groups of objects (total within 5) counting how many are there	<i>Understand the concept of addition by practically combining sets of objects to find how many</i>	
	Reacts to significant changes in amounts (half the amount)	Identifies that a group has less (fewer) when items have been removed	Uses the word less to describe the change to an amount when items are removed		<i>In real life contexts find one fewer (less) than a given number</i>			Remove a given amount from a greater set (the whole) counting to identify how many are left	<i>Understand the concept of subtraction by practically removing one amount from within another to find how many are left</i>	
	Reacts to significant changes in amounts (double the amount)	Identifies that a group has more when items have been added	Uses the word more to describe the change to an amount when items are added	React to changes of amount in a group of up to three items	Understand the concept of addition as combining sets of objects	Understand that the terms add, total, altogether relate to combining groups of objects	Count up to 5 objects, moving each as they are counted	Combine two groups of objects (total within 5) counting how many are there	Combine two groups of objects (total within 10) counting how many are there	<i>In real life contexts add two single-digit numbers totalling within 10, using practical equipment</i>
	Reacts to significant changes in amounts (half the amount)	Identifies that a group has less (fewer) when items have been removed	Uses the word less to describe the change to an amount when items are removed		Understand the concept of subtraction as removing one amount from within another	Understand that the terms subtract and take away relate to removal of one group from another	Count up to 5 objects, moving each as they are counted	Remove a given amount from a greater set (with a whole of up to 5) counting to identify how many are left	Remove a given amount from a greater set (with a whole of up to 10) counting to identify how many are left	<i>In real life contexts subtract a single-digit number from a number up to 10, using practical equipment</i>

Shape	Birth to 3			3 and 4 year olds				
	Learning and Progression Examples		Key Learning	Learning and Progression Examples			Key Learning	
	Explores a range of objects through touch	Stacks objects using flat surfaces		Combine objects like stacking blocks and cups	Recognises that two objects have the same shape	Chooses items based on their shape which are appropriate for the child's purpose	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
Responds to changes of shape	Stacks objects using flat surfaces	Enjoys using blocks to create their own simple structures and arrangements	Build with a range of resources	Makes simple constructions		Chooses items based on their shape which are appropriate for the child's purpose		Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.
Attempts, sometimes successfully, to match shapes with spaces on inset puzzles	Pushes objects through different shaped holes, and attempts to fit shapes into spaces on inset boards or puzzles	Chooses puzzle pieces and tries to fit them in	Complete inset puzzles	Recognises that two objects have the same shape	Shows awareness of shape similarities and differences between objects		Responds to both informal language and common shape names	Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'
								<i>Know that shapes can appear in different ways and be different sizes</i>
Space	Enjoys filling and emptying containers		Beginning to put objects of similar shapes inside others and take them out again	Put objects inside others and take them out again	In everyday situations, understand and use the terms on top, under(neath) with the support of gestures	In everyday situations, understand and use the terms in front of, behind, next to with the support of gestures	Responds to some spatial and positional language	Understand position through words alone – for example, "The bag is under the table," – with no pointing
	Explores space when they are free to move, roll and stretch	Explores space around them and engages with position and direction, such as pointing to where they would like to go	Investigates fitting themselves inside and moving through spaces	Climb and squeezing selves into different types of spaces	Moves their bodies and toys around objects and explores fitting into spaces	Begins to remember their way around familiar environments	Responds to some spatial and positional language	Describe a familiar route
	Enjoys filling and emptying containers		Beginning to put objects of similar shapes inside others and take them out again	No equivalent birth to 3 example	In everyday situations, understand and use the terms on top, under(neath) with the support of gestures	In everyday situations, understand and use the terms in front of, behind, next to with the support of gestures	Responds to some spatial and positional language	Discuss routes and locations, using words like 'in front of' and 'behind'

	Shows interest in patterned songs and rhymes, perhaps with repeated actions		Experiences patterned objects and images		Notice patterns and arrange things in patterns	Identifies patterns in the environment		Describes simple patterns in the environment		Talk about and identifies the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.	
	Joins in with repeated actions in songs and stories	Initiates and continues repeated actions	Beginning to arrange items in their own patterns, e.g. lining up toys			Is interested in what happens next using the pattern of everyday routines	Joins in and anticipates repeated sound and action patterns		Continues a repeating ABAB pattern	Extend and create ABAB patterns – stick, leaf, stick, leaf	
	Becoming familiar with patterns in daily routines	Begins to predict what happens next in predictable situations	Joins in with and predicts what comes next in a story or rhyme							Notice and correct an error in a repeating pattern	
Sorting	Recognises that objects look, feel (and sound) different		Shows interest in objects that are similar to each other		Beginning to arrange items in their own patterns, e.g. lining up toys	No equivalent birth to 3 example	Recognises that two objects have the same shape		Shows awareness of shape similarities and differences between objects		Sort objects and say what features they have in common
Measurement	Responds to size, reacting to very big or very small items that they see or try to pick up	Shows an interest in objects of contrasting sizes in meaningful contexts	Shows an interest in size and weight	Explores differences in size and length		Describe and compare sizes using gesture and language – 'bigger / little / smaller', 'high / low', 'tall',		In meaningful contexts, finds the longer or shorter of two items		Find an object of similar length/ width/ height	
										Make comparisons between objects relating to size, length and height e.g. longer / shorter; wider / narrower; taller / shorter	
	Shows an interest in size and weight		Explores differences in weight		Describe and compare weights using gesture and language – 'heavy'			In meaningful contexts, finds the heavier or lighter of two items		Make comparisons between objects relating to weight e.g. heavier/lighter	
	Shows an interest in emptying containers	Explores capacity by selecting, filling and emptying containers, e.g. fitting toys in a pram	Explores differences in capacity		Use language of full and empty to describe the amount in different containers			In meaningful contexts, finds the more/less full of two items		Make comparisons between objects relating to capacity e.g. more/less	
	Know that items can be bought in shops and other places (online)					No equivalent birth to 3 example		Understand that we need to pay for goods		Understand that money is used to pay for items	Understand that we need to pay for goods
Shows an interest in shops and buying items											

	Talk about where things we need can be obtained	No equivalent birth to 3 example	Understand that we need to pay for goods	Understand that items can have different prices	<i>Talk about things they want to spend their money on</i>				
		No equivalent birth to 3 example	Shows an interest in coins and notes	Identifies that coins, notes and plastic cards (credit/debit cards) can be used to pay for things	<i>Talk about different ways we can pay for things</i>				
	Recognises that objects look, feel (and sound) different	Shows interest in objects that are similar to each other	No equivalent birth to 3 example	Talk about coins using properties such as shape, colour and size	Recognise that there are different coins	Talk about notes using the property of colour	Recognise that there are different notes	<i>Recognise that there are different coins and notes</i>	
	Gets to know and enjoys daily routine such as mealtimes and bath time	Beginning to understand that things might happen now or at another time, in routines	<i>Talk about significant times of the day, e.g. home time, lunch time, snack time, bed time, etc.</i>	Beginning to understand some talk about immediate past and future	Beginning to anticipate times of the day such as home time	Understand that 'before' means earlier	Understand that the current day is always known as 'today'	Understand that 'yesterday' is the day before today	<i>Understand and use language – before, after, yesterday, today, tomorrow</i>
	Gets to know and enjoys daily routine	Beginning to understand that things might happen now or at another time, in routines		Understand that 'first' position in a line is the start of the line	Understand that 'last' in a line is the end of the line	In a story, understand that 'first' refers to the start(ing action)	In a story, understand that 'last' refers to the end	Understand that 'tomorrow' is the day after today	
			No equivalent birth to 3 example	<i>Understand and use language – before, after, yesterday, today, tomorrow</i>			Know that days have names	<i>Know some names of the days of the week</i>	

