

Early Years Maths



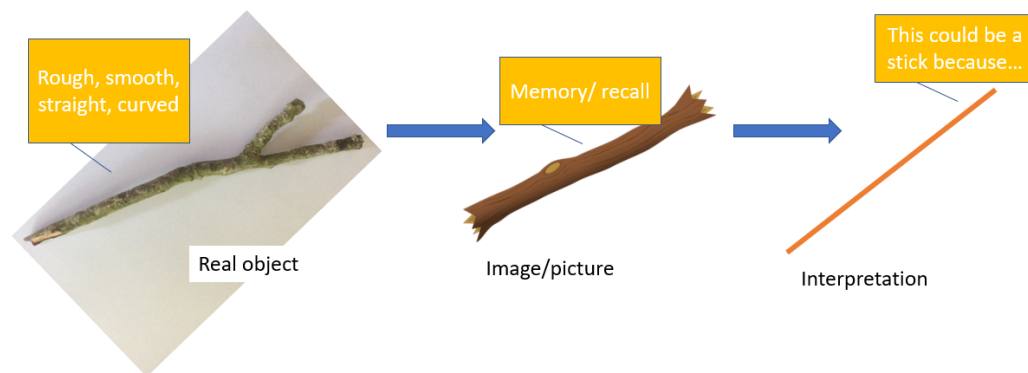
Statutory Educational Programme: Mathematics In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space, and measures.

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.

Range 3 & 4

Developing a schemata

- To understand something you need to be able to connect the concept with a previous experience.



	Weeks 1 - 3	Week 3 - 6	Week 7 -9	Week 10 - 12
Aut	How much, how many?	Me and you, One, two.	Lots more, let's explore!	All change or stay the same.
Spr	Five alive!	How many more?	How many now?	Numbers aloud
Sum	Inside outside number fun		Everyday number explorers	

How much?

Cannot be counted by saying number names.

Can be compared by size including length, mass and capacity.

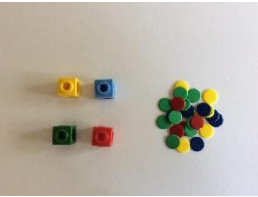


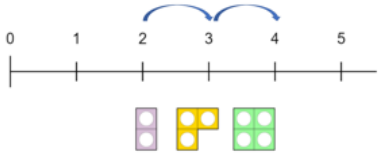
How many?

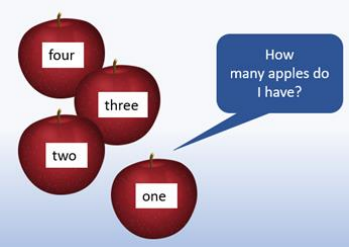

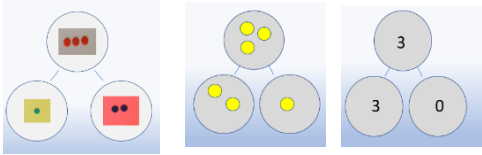
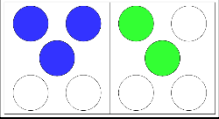
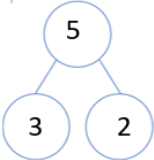
Can be counted, saying number names.

Separate items to be counted.

Starting and finishing points.

Cardinality, subitising, composition.

Term	Definition	Examples and suggested resources
<p>Comparison</p>	<p>Exploring the similarities or differences between two or more items.</p>	<p>“more, lots, fewer, the same” Natural materials and objects. Mathematical resources such as counters and cubes.</p> 
<p>Estimation</p>	<p>A reasonable judgment based on knowledge.</p>	 <p>Using knowledge of ‘how many’ to estimate a small number of objects. “I think there are about 8 leaves.”</p>
<p>Counting</p>	<p>Saying number names in order to find an amount.</p>	<p>How many spoons? Line up, then count say “one, two, three, four.” Move and count, touch and count saying the number names in order.</p> 
<p>Stable Order</p>	<p>Saying the number names as a repeated pattern. Use different starting points.</p>	 <p>What comes next? “Two, three, four.....”</p>

<p>Cardinality</p>	<p>Knowing the last number spoken represents how many are in the set.</p>	 <p>There are four apples in the bowl. "One , two, three, four...four apples."</p>
<p>Subitising</p>	<p>Instant recognition of small quantities without saying number names in order.</p>	 <p>"Three" Numicon, Hungarian Frames, dot patterns. Dice, dominoes, cards.</p>
<p>Composition</p>	<p>Number structure, how numbers are built.</p>	<p>Three. Counters, cubes. $1 + 1 + 1 = 3$ $1 + 2 = 3$ $2 + 1 = 3$</p> 
<p>Partition</p>	<p>The parts that make up a total amount.</p>	 <p>Five can be shown as 3 and 2. Hungarian Frames, Ten Frames, Numicon. Whole part-part diagrams.</p> 

Stories, Rhymes & Songs
Goldilocks and the three Bears
Three Billy Goats Gruff
The Button Box – Margarette S. Reid
Dear Zoo – Rod Campbell
Cat's Car – Richard Fowler
Count to 10 with a Mouse -Margaret Wise Brown
Blast Off! – Malachy Doyle
Flamingo Flo Walks Home – Emma Pelling

Pattern
Becoming familiar with patterns in daily routines.
Snack time, play time, lunch visual timetables.
Is interested in what happens next using the pattern of everyday routines
Knowing that something will happen next, soon, later.

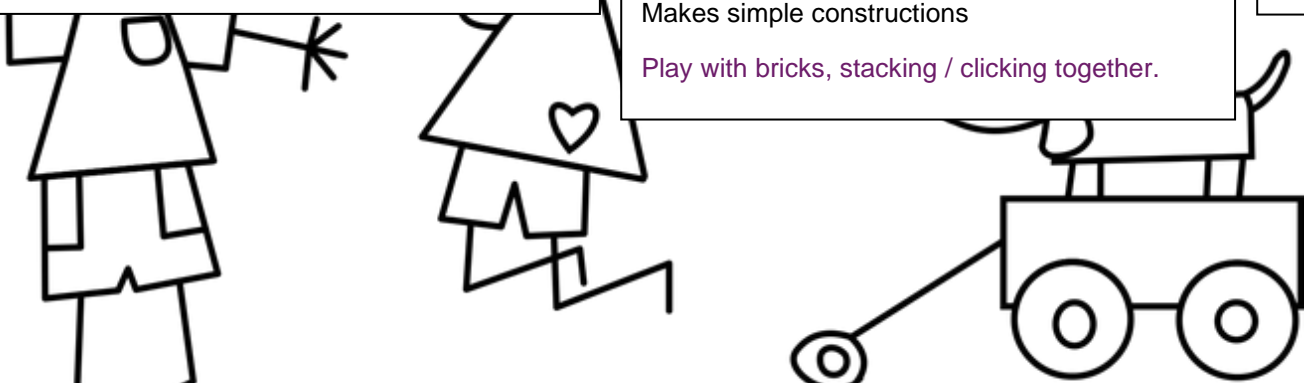
In the Maths Zone
I Spy Numbers – Jean Marzollo
How much... do you want?
Would you like lots? More?
Hiding objects and recovering them.

How much, how many?
How much do you need?
How many have you got?

Spatial Awareness
Enjoys filling and emptying containers.
Empty, full, half full cups of juice, pouring water, sand, rice.
Begins to remember their way around familiar environments, e.g., knows where to find their favourite activity
We are going to wash our hands. What will we see?
We are going outside. What is outside?

Shape
Uses blocks to create their own simple structures and arrangements including lines of identical shapes
Tuff tray shapes for sorting and finding in the gloop.
Makes simple constructions
Play with bricks, stacking / clicking together.

Measures
Associates a sequence of actions with daily routines. Beginning to understand that things might happen 'now' or at another time
Anticipates times of the day such as mealtimes or home time
How long until lunch? Wait for your turn in the game.



Stories, Rhymes & Songs

Goldilocks and the three Bears

Three Billy Goats Gruff

The Button Box – Margarette S. Reid

Dear Zoo – Rod Campbell

Cat's Car – Richard Fowler

Count to 10 with a Mouse -Margaret Wise Brown

Blast Off! – Malachy Doyle

Flamingo Flo Walks Home – Emma

Pattern

Joins in with and predicts what comes next in a story or rhyme.

One little bear wondering what to do, along came another one and then there were.....

Joins in and anticipates repeated sound and action patterns.

Two little Dickie Birds. 1,2,3,4,5 jump!

In the Maths Zone

I Spy Numbers – Jean Marzollo

My family.

How many in your family? Picture match.

Head, shoulders, knees, and toes.

**Me and you,
One, two!**

Spatial Awareness

Investigates fitting themselves inside and moving through spaces.

Obstacle course. Dog agility small world or physical play.

Moves their bodies and toys around objects and explores spaces, e.g.squeezing into a tiny gap

Shape

Attempts to fit shapes into spaces on inset boards or puzzles, beginning to select a shape for a specific space e.g., two-piece jigsaw, shape sorter.

Responds to spatial and positional language when used in conversation, e.g. pointing things out

Measures

Shows an interest in size and weight.

How tall? How heavy?

Compares sizes, lengths, weights and capacities using gesture and informal language

Stacking cups, Russian doll type play, boxes inside boxes.

Stories, Rhymes & Songs

None the Number – Oliver Jeffers

One Gorilla -Anthony Browne

My Mum and Dad Make Me Laugh-Nick Sharratt

One Too Many Tigers – Cressida Cowell

Too Many Carrots – Katy Hudson

Who Sank the Boat ? - Pamela Allen

The Blue Balloon – Mick Inkpen

Pattern

Notices, predicts, and continues patterns in familiar contexts.

Autumn nature collections arranged in patterns and colours.

Beginning to arrange items in their own patterns, e.g., lining up toys.

Choosing the firework patterns e.g., star, whizz, rocket!

In the Maths Zone

I Spy Numbers – Jean Marzollo

Find me one...

Find me two...

Find me more....

Hide objects under a cloth saying one, two. What is under the cloth?

Lots more, let's explore!

Spatial Awareness

Pushes objects through different shaped holes, moving them around to see if they fit.

Which objects will shoot down the tube? Which get stuck?

Responds to spatial and positional language when used in conversation, e.g. Pointing things out.

Firework display, shooting rockets, falling stars up in the sky.

Shape

Attempts to fit shapes into spaces on inset boards or puzzles, beginning to select a shape for a specific space e.g., puzzles with more parts.

Posting shapes and items through slots and holes.

Recognises that two objects have the same shape.

Matching firework shapes, leaf shapes and outlines.

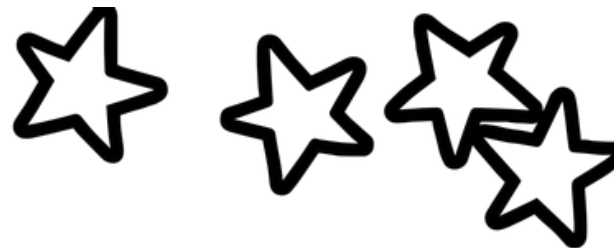
Measures

Explores capacity by selecting, filling and emptying containers e.g., fitting toys in a pram.

Filling containers with conkers, acorns.

Compares sizes, lengths, weights and capacities using gesture and informal language.

Explore pouring and filling for transporting e.g., bonfire sticks.



Stories, Rhymes & Songs
How do Dinosaurs Count to 10? -Jane Yolen & Mark Teague
Cockatoos – Quentin Blake
The Very Hungry Caterpillar – Eric Carle
Sidney the Silly Who only eats 6 -M.W. Penn
Bears on the Stairs – Julia Jarman

Pattern
Becoming familiar with patterns in daily Routines e.g., seasonal changes, darker days, colder weather.
Is interested in what happens next using the pattern of everyday routines.
Routines affected by the seasonal weather e.g., windy weather play, snow flake catch.






In the Maths Zone
I Spy Numbers – Jean Marzollo
Who has more? Who needs more?
Pass the parcel, unwrap one layer, unwrap two layers.


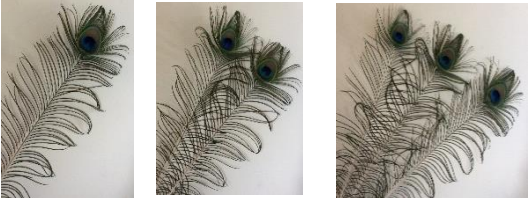



All change or stay the same!





Spatial Awareness
Enjoys filling and emptying containers.
When are they the same? All full, all empty.
Explores how things look from different viewpoints including things that are near or far away.
Mirror play to explore viewpoints.

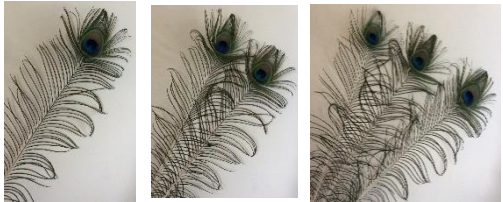




Shape
Uses blocks to create their own simple structures and arrangements including lines of identical shapes.
Silhouettes of objects to be sought/tidied. E.g., cars, teddy
Recognises that two objects have the same shape.
Weather symbols e.g., sun, cloud, rain drops.
Frozen shaving foam shapes.




Measures
Shows an interest in size and weight.
Which parcels are the same and which are different?
Beginning to understand some talk about immediate past and future.
Christmas is coming! Counting the days. What happened yesterday? Tomorrow we are going to do this.

Range 3	What the child is learning	Fluency	Reasoning	Problem Solving
	<p>Comparison</p> <p>Knows that things exist, even when out of sight</p> <p>Compares amounts using words like 'lots' or 'more'</p>	<p>I have two socks. One sock, two socks. Here is one sock. Where is the other sock? Here it is!</p>  <p style="margin-left: 300px;">“One, two. Now we have two”</p> <p>Cover half a plastic bottle lengthways and fill it with objects such as buttons, pipe cleaners etc. Roll the bottle so that sometimes the objects are visible and sometimes covered.</p> <p>Use a small clear bag with a piece of card inside. Turn the bag over to show two items, then over again to hide them. 'Where are the two buttons?' They are still in the bag!</p>	<p>Owl and Wombat are playing with the basket. Wombat goes into the basket. Where is he? Is he still there?</p>    <p>"I have put all the sheep in this field and all the cows in the other field."</p>	<p>Small world play, Put out some small toys and play putting them into baskets, boxes and bags. Model "I know Owl is in the bag because I put her in!"</p> <p>Outside Find the fish and put them in the fishbowl. Cover the fishbowl. "Where are the fish?"</p>  <p>Imaginative play Gradually able to engage in pretend play with toys (supports child to understand their own thinking may be different from others).</p> <p>Snack time</p>

		<p>"Lot's more, not many, not enough."</p> 	<p>I have more cows. Is that right?</p> <p>"I have these orange segments. Is that enough for everyone to get a piece?"</p>	<p>"Let's put all the apples together in the bowl. Do we have enough?"</p> <p>Construction "Do you have enough bricks for your tower? Do you need any more?"</p>
<p>Counting Says some counting words</p> <p>Engages in counting-like behaviour, making sounds and pointing or saying some numbers in sequence</p>	<p>Saying number names and matching it to the quantity at the same time.</p> <p>"Let's count out 1 feather, 2 feathers, 3 feathers."</p>  <p>Moving objects when counting.</p>	<p>"I have lots of buttons, but only one cotton reel." Is that true?</p>  <p>"I am going to give each toy one cake with lots of candles. Watch me do this"</p>	<p>Manipulative play Threading cotton reels. "Let's put lots of cotton reels on the pipe cleaner."</p>  <p>Puppet play</p> 	

	<p>Cardinality Uses number words, like 'one' or 'two' and sometimes responds accurately when asked to give one or two things</p>	<p>"How many buttons do I have?" Model counting and saying number names, Emphasis on the last number spoken.</p> <p>How many party invitations is Bear going to send?</p>  <p>Two balloons, one two.</p> <p>How many cups do we need at snack time? Count the cups onto the table.</p>	<p>Tidy up time Please put two cars into the box.</p>  <p>I have put one pencil back in the pot. Is that right?</p>	<p>Play doh How much play doh do we need? Have you got two pieces?</p> <p>Things in pairs Wellies, sock, shoes and dressing up in twos.</p>  <p>Knock down two cans.</p> 
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------


Range 4	What the child is learning	Fluency	Reasoning	Problem Solving
	<p>Comparison Beginning to compare and recognise changes in numbers of things, using words like 'more', 'lots' or 'same'</p>	<p>Quantity and number name match.</p> <p>Saying number names and matching it to the quantity at the same time.</p> <p>"Let's count out 1 feather, 2 feathers, 3 feathers."</p> <p>Careful modelling of counting out a given quantity and stopping at a required number.</p>  <p>Moving objects when counting.</p> <p>Emphasis the final number, with a closing gesture.</p> <p>Use intonation in voice when counting.</p>	<p>"3 feathers are more than 2 feathers." Prove it by move and count.</p> <p>Sensory objects to find and count.</p> <p>Do I have 3</p>  <p>feathers?</p>  <p>Do I have more shells than feathers?</p>	<p>Manipulative play Threading cotton reels. "Let's put 3 cotton reels on the pipe cleaner."</p>   <p>Puppet play Zoe the Zebra wants 1 apple and 2 carrots for tea. Does she want more carrots or apples?</p>

<p>Beginning to count on their fingers</p>	<p>Counting Says the number sequence, maybe skipping some numbers (e.g. 1-2-3-5) and</p>	<p>Number songs and rhymes: 1,2,3,4,5 Once I Caught a Fish Alive, 1 Little Elephant Went Out to Play. 1,2, Buckle My Shoe.</p>  <p>Use props to act out the song.</p> <p>“One, two, three, four, five (jump)” Use intonation and actions.</p>  <p>One, two, three fingers.</p>	<p>When singing, question what number is going to come next?</p> <p>Making choices. “How many petals shall we put on your flower?”</p> <p>“Let’s do your coat up. How shall we count the buttons?” “I think you have 3 buttons.”</p> 	<p>Imaginative play Dressing up and taking part in a song. Responding to the music, making up gestures or making sounds.</p> <p>Mud kitchen “What soup shall we make?” Count the ‘ingredients.’ Choose items to promote curiosity.</p> <p>Snack time “We need to count the fruit today. How shall we do it?” Preparing food.</p> <p>Music time Creates sounds by banging, shaking, tapping or blowing. Follow the music by shaking 1,2,3 or banging 1,2.</p> <p>Create a ‘Terrific Two’ display.</p>
--------------------------------------------	-----------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------


Cardinality
Gets 2 or 3 objects from a group.

Beginning to notice numerals (number symbols)



"Let's put out 3 chairs."



Count 3 tomatoes from the bowl.




I have put out two cups. One,





Show me two pretty butterflies.


Are there 3 pinecones?



How many children can paint today?



Role Play
Lay the table for three toys, choosing the cups, plates, and spoons from the box.



Sand
Make two sandcastles. Put shells on your castles. Count out 2 or 3 from the bag.

