# Children aged birth – 2 years

Children develop math concepts and skills very early in life. From the moment they are born, babies begin to form ideas about math through everyday experiences and, most important, through interactions with trusted adults. Language — how we talk with infants and toddlers about math ideas like more, empty, and full—matters (NAEYC, 2020)*.*

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| General ideas | | |
| Mathematics and numeracy experiences for infants are most effective when they are offered in relaxed and playful ways as part of everyday routines and connections. One of the most important things educators can do to support very young children's mathematics and numeracy skill development is to include mathematical language in their everyday interactions. For example, counting fingers and toes, naming shapes patterns and identifying the relationship between objects.  Children are active learners exploring the world through touch sight, sound, taste, smell and movement. The child’s brain develops rapidly through physical explorations and their active engagement with others who speak and respond to their interests. ... Young children begin to develop explanations for observed phenomena, and consider what they can learn from experiences. With encouragement, guidance, experience and learning children further develop their capacity to reflect on their own thinking processes and approaches to learning. This is fundamental to maintaining positive learning and development trajectories. (VEYLDF, 2016) | | |
| Number and algebra | Measurement and geometry | Statistics and probability |
| Play-based learning experiences | | |
| Playing with numbers Use everyday moments, while children are playing or during routines, to make a connection to numbers. For example:  *‘Look at that teddy bear – she has two eyes; you have two eyes too.’*  *'You have three blocks next to you – you can have another one, and you will have four blocks.'* Singing with numbers Sing number songs and rhymes throughout the day particularly when children are actively interested in the world around them. For example:  [*One two three for five once I caught a fish*](https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-1-2-3-4-5-once-i-caught-a-fish-alive/zdy6jhv)  [*5 little ducks went out one day*](https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-five-little-ducks-went-swimming-one-day/z43xwty)  [*There Were Ten In The Bed*](https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-ten-in-the-bed/z7bnmfr)  For more songs to use with children, see [The Australian Parenting Website](https://raisingchildren.net.au/guides/baby-karaoke/song-sheets). Reading with numbers Read picture books featuring numbers and take time to count the items with children. Use the book as a starting point to count objects that are in the children’s immediate environment.  There are many books available that feature counting or stories about numbers. For example:  *Ten Little Fingers and Ten Little Toes* by Mem Fox  *Dear Zoo* by Rod Campbell  These books engage children in simple routine and exploring the world through numbers and they are also available as board books.  See the book list for more suggestions. | Playing with shape Use everyday moments, while children are playing or during routines, to make a connection to shape, pattern, dimension and measurement. For example:  *‘Look at bird she has really long legs...’*  *Look at these trucks – do you want the big one or the small one?*  *‘That one is heavy isn’t it…’*  *‘You’ve got the square shape – does it fit in here?’* Singing with shapes Sing shape and pattern songs and rhymes throughout the day particularly when children are actively interested in the world around them. For example:  [*Baa Baa Black Sheep*](https://raisingchildren.net.au/guides/baby-karaoke/baa-baa-black-sheep-lyrics)  [*Open Shut Them*](https://raisingchildren.net.au/guides/baby-karaoke/song-sheets/open-shut-them)  [*Twinkle Twinkle*](https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-twinkle-twinkle-little-star/zds6jhv)  For more songs to use with children, see [Raising Children Network](https://raisingchildren.net.au/guides/baby-karaoke/song-sheets).  Reading with shapes and measurement  Read picture books featuring shapes and measurement and take time to explore these ideas with children in the world around them.  There are many books available that feature size and shape. For example:    *Bulldozer’s Shapes: Goodnight, Goodnight, Construction Site* by Ethan Long, Sherri Duskey Rinker  *Little Spider's Shapes Board Book* by Rosie Greening  These books engage young children in exploring shapes and sizes in the world around them and are available as board books.  See the book list for more suggestions. | Playing with statistics and probability Use everyday moments, while children are playing or during routines, to make a connection to sorting, understanding and presenting information in groups to maximise opportunities to engage with the key concepts of statistics and probability.  For example, introduce problem-solving, sorting and predicting into everyday conversations.  *‘Let’s put all the balls in this basket...’*  *‘Can you put the cars in here and the books in here?’*  *'Let's look at the window and see if it looks like it's going to rain today… we might need a coat...'*  *‘Let's feed the fish – do you think he will eat up all the food…’*  *‘Where did the teddy go?’*  *‘Where are all of your socks…*  *can you put them with all of your other socks…‘*  Simple incidental conversations with children about what they like and don’t like, what belongs to them and who is in their family for example, builds their understanding of grouping and classifying object and ideas.  Sing and reading with sorting, understanding and presenting information from groups  Read and sing children’s favourite picture books or songs and encourage children to show or say what happens next.  For example:  *Where is Spot?* by Eric Hill  In this book, children look for where Spot the dog might be. Ask children to let you know if they think Spot will be under the blanket?  *Dear Zoo* by Rod Campbell  This book is a lift the flap picture book where children guess at what animals might be sent from the zoo.  See the book list for more suggestions. |
| Out and about spaces – in the yard, in the garden, in the bush | | |
| Going for a walk Taking children out walking in the community offers many opportunities to count and notice numbers for example  As you walk, point out the numbers on the letterboxes – count how many houses you walk past.  Count how many birds you see or how many cars are in a driveway or how many rubbish bins are ready for collection.  Pick up leaves, stone or shells or other natural materials and count them together. | Spending time in nature (outside, in the playground, park or bush) When children are out and about in nature, there are many opportunities to explore shapes, patterns, dimensions and measurement.  As you walk point out, the shape and height of the trees that you pass.  Identify the colour and size of the different things you see – ‘*Look at this green caterpillar… isn't it tiny?*  Think about how far you have walked – talk to children about being out for a long time or a short time.  Look around and help children notice patterns in the world around them – leaves, rocks, and in the sky. | Going Out As you get ready to go out talk to children about what you will need to bring with you. Invite children to go and look outside to see what the weather is like and then talk about what you will need.  Pose some questions to help children make predictions and think about possible scenarios.  *What happens if we get thirsty… should we bring our water bottles?*  *What should we wear on our feet to stop our feet getting cold and wet?* |
| The home, in the community | | |
| In routines Use routines such as mealtimes, bathing, getting dressed or ready for bed, as times to explore numbers and the way they help us describe the world. For example: Mealtimes: Mealtimes present many opportunities for mathematics play. ‘*Let's cut the banana in two pieces – you have one and I will have one’ or 'One spoon for you and one for me.'* Getting dressed: Getting dressed presents many opportunities for mathematics play.  *‘We need two socks – one for this foot and one for this foot…’*  *‘One leg in your pants and now the next leg…'*  *‘You have lots of cars on your top – we can count them…’* Visit the library Go for a walk to the library to choose some of the books listed above or others you might find. Remember to ask the librarian for assistance or join in reading times to find out about new books to enjoy. | In routines Use routines such as mealtimes, bathing, getting dressed or ready for bed, as times to explore shapes, patterns, dimensions and measurement and the way they help us understand and describe the world. For example: Mealtimes: Present food to children that are cut in different shapes and sizes. As you share the meal identify the different food items using shape and colour and size terminology. For example, *‘That’s a yummy red apple…’ or ‘That’s a big piece of green broccoli…’* Getting dressed: Getting dressed presents many opportunities for mathematics play. As you get dressed, identify the different items using shape and colour and size terminology. Visit the shops Go for a visit to the shops and look for patterns, shapes and colours when you are there.  Point out to children rows of apples, stacks of yellow bananas, different coloured socks – shops are full of colour pattern and size. | In routines Use routines such as mealtimes, bathing, getting dressed or ready for bed, as times to explore sorting, understanding and presenting information from groups to help us describe the world. For example: Sorting the washing: Invite children to help sort out the washing into relevant groups.  *'Let's put all the bibs in a pile.'*  *‘Let’s put all of your clothes in here…’* Getting dressed: Talk to children about making predictions about what they need to wear.  *‘Let’s look out the window… is it going to rain today/is it going to be a cold day outside – what do we need to wear?’* |
| Educator Led Learning | | |
| Counting toes Counting toes and fingers is a fun and easy way to learn to count. Support children to count from one to five and then from one to ten by wiggling each toe or finger and naming the number.  Add a rhyme to the counting game such as This little piggy went to market. | Make a pattern Play pattern games with children where you take it in turns to place a block or shape on the floor in front of them and then invite them to put one on top. Then take turns to build a tower or form a row. Spatial toys Blocks and puzzles are easy ways to introduce spatial concepts in play. Talk to children about the size and shapes of blocks and puzzle pieces, identify sides and corners and describe the location of objects. | Sorting games Matching and fitting shapes into their correct places (on a puzzle or in a sorting container) helps to make predictions about how things fit together or sort them into groups with the same features.  Support children to think about how features match by asking children about where shapes might go. |
| Helpful resourcesBabies and toddlers: Amazing learners The [Babies and toddlers: Amazing learners](https://www.vcaa.vic.edu.au/curriculum/earlyyears/ey-curriculum-resources/birth-to-3/Pages/Birth-to-3years-Babies-Toddlers.aspx) resource is a set of three videos that showcases selected examples of significant learning in the birth-to-three-years age group. The aim is to make babies’ and toddlers’ learning visible and, by doing so, to expand awareness and appreciation of it. As a result, professionals will observe more closely and reflect on what babies’ and toddlers’ behaviour might mean. They will also adopt an image of babies and toddlers as capable and competent learners and enact this image in their work. For additional advice download the [Babies and toddlers: Amazing learners](https://www.vcaa.vic.edu.au/Documents/earlyyears/BabiesToddlersbookletweb.pdf) information booklet. Early Math Collaborative [Developing Ideas of Attribute While Reading to Babies](https://earlymath.erikson.edu/developing-ideas-attribute-reading-to-babies/) is a collection of ideas to support and enhance the teaching of mathematics to young children. Central to their ‘ (Erikson Institute , 2020). Learning & Teaching with Learning Trajectories [LT]2 [Learning & Teaching with Learning Trajectories](https://www.learningtrajectories.org/) is a web-based tool for early childhood educators to learn about how children think and learn about mathematics and how to teach mathematics to young children (birth to age 8). Early Years Planning Cycle Resource for the Victorian Early Years learning and Development Framework (VCAA) The [Early Years Planning Cycle Resource for the Victorian Early Years Learning and Development Framework](https://www.vcaa.vic.edu.au/Documents/earlyyears/EarlyYearsPlanningCycle.pdf) is designed to demonstrate how the VEYLDF planning cycle can be applied to observe, assess and respond to evidence of children learning. Victorian Early Years Learning and Development Framework Illustrative Maps The [Illustrative Maps](https://www.vcaa.vic.edu.au/curriculum/earlyyears/veyldf/veyldf-illustrative-maps/Pages/Index.aspx) are a set of maps developed for early childhood professionals to inform curriculum planning and pedagogy with young children, that link the five outcomes with the first three levels of the Victorian Curriculum F-10. | | |