Using the practice **Early numeracy**

This resource outlines some strategies to embed early numeracy in your early childhood education and care setting.

Engage in sustained shared conversations with children

One way to develop early numeracy in children is to engage in 'sustained shared conversations'. The Early Years Learning Framework states that sustained shared conversations are an important strategy for educators and teachers to employ. By asking children questions, educators can prompt children to explore their ideas in more depth. Educators can extend children's thinking by working together to solve a problem, clarify an issue, evaluate learning experiences or extend a narrative. Opportunities for engaging in sustained shared conversations can occur throughout the day during routines, transitions, planned and spontaneous experiences.

Strategies for engaging in sustained shared conversations with children aged 3-5 years are outlined in the following table. For examples of sustained shared conversations that develop children's literacy and executive function and self-regulation skills, see literacy and executive function and self-regulation resources.

Strategy	Question stems to encourage conversations	Examples
Prompt children to explain their thinking.	• 'How did you know...?' • 'Why does this...?' • 'Why do you think...?' • 'Why can't we...?' • 'What happens next?'	'How do you know this one is heavier...?'
		'What made you put these items together in a group?'
Help children to think through alternatives.	• 'I wonder what would happen if...?' • 'What is another way we could try...?'	'I wonder what would happen if added a bit more milk to the jug?'
		'What is another way we could try measuring how far we jump...?'

Strategy	Question stems to encourage conversations	Examples
Encourage children to elaborate, recap, and clarify ideas.	• 'I really want to know more about…' • 'So, you think that…'	'I really want to know more about how you built this tower to make it so sturdy!' 'What do you think would happen if we took these away?'
Offer suggestions to help children extend their ideas.	• 'Could we try doing it this way…?' • 'What if you…?' • 'I find it useful when…' • 'Have you thought about trying…?'	'It looks like these jars don't all fit in that box! Have you thought about trying a bigger box?'
Provide examples of how to problem solve and model your thinking.	• 'I have to think hard about…' • 'I need to…' • 'First I will … and then I will … and then I can…'	'We need enough clay rollers for all the children here. To work out how many rollers we need, first I need to count the children. Can you count with me?'
Show genuine interest and provide encouragement for further thinking.	• 'That's an interesting idea!' • 'I like what you have done.' • 'You have thought really hard about … what can you do next?'	'Really? Are you sure you are taller than me?' [child's response] 'That is interesting you say that; is there a way we can measure it?' 'I like what you have done. You have collected some leaves, gumnuts and sticks.' [child's response] 'What are you going to do next? How about we sort these into groups?'

Embed numeracy learning throughout the day

Here are some examples of when you might build early numeracy skills into different learning experiences and interactions throughout the day with children aged 3-5. These examples show how you may start a conversation and illustrate a pause where the child can engage and steer the conversation with their response. You can use these examples as inspiration for conversation starters with your children.

Moments in the day	Example of how to build in numeracy	What this might sound like with children
Drop off	Ask children questions that prompt numerical thinking.	'I'm so excited to see how you will build with the blocks. What will you create?' [child's response] 'How many blocks do you think you will need to make that?' [child's response] 'I wonder how tall your tower will be. I can't wait to see!'
Mealtime	Talk about setting up and serving incorporating concepts like measurements and counting.	'How did you find out how many chairs we need at the table?'
		'Can you check to make sure that everyone has both the cucumbers and the dip on their plate?'
		'Do you think that Jack's cup needs more water?'
Planned and spontaneous experiences	Use stories and events to encourage children to think mathematically.	'So, do you think there are more red fish than blue fish?' [child's response] 'Hmm, I wonder what would happen if two blue fish swam away? Could you tell me how many fish there would be left?'

Moments in the day	Example of how to build in numeracy	What this might sound like with children
Planned and spontaneous experiences	Embed counting and number skills.	'You're playing hopscotch! Can you count how many hops you need to do?' [child's response] 'One, two, three, four, five hops, great counting! What about if we skip this square? How many hops then?'
	Help children to express patterns in conversation.	'Are you making a necklace with the beads? This looks like a pattern to me. Blue, green, blue, green. Which colour will go next?'
	Assist children in understanding different types of measurement.	'That bucket looks very heavy to lift. It is very full. How could you make it lighter to lift?'
	Use concrete manipulatives to help children visualise numbers.	'How many cushions did you stack to make your tower? Let's count them together to see how many.' [child's response] 'How many do you have if we take two away?'
	Provide opportunities for sorting, grouping and classifying.	'Yesterday we learned about the different types of insects that live in the water. Can you show me which ones live in the pond?'
	Model mathematical vocabulary, such as positional or comparative language.	'Can you see the bird?' [child's response] 'It is sitting beneath the tree.' [child's response] 'Did you see that? He flew around the tree, moved up towards the sky and sat on top of the fence.'

Moments in the day	Example of how to build in numeracy	What this might sound like with children
Planned and spontaneous experiences	Embed concepts of measurement into different learning experiences to expose children to different types of measurements.	'How long should the butcher paper be to cover the whole table?' [child's response] 'Which apple is heavier?' [child's response] 'The recipe says we need two cups of apple. Which apple do you think will give us more cubes when we cut it?'
	Integrate mathematical concepts across planned learning experiences such as science, art, music.	'What a beautiful butterfly! What shapes and colours have you used?'
		'I wonder what objects will float and what objects will sink?' [child's response] 'How did you know that the stone sinks in the water?' [child's response] 'Have you tried this before?'
Pick up	Share mathematical thinking and learning with parents and primary caregivers.	'Would you like to show dad the pattern you made today?'
		'Nolan did some baking today! Nolan, do you remember what we used to measure the ingredients?'