

## Learning-oriented talk: Professional learning resource 5

# Reasoning Talk

### What is reasoning talk and why is it important?

Reasoning talk seeks and offers explanations about actions, events, objects and emotions. It allows young children to ask for and offer explanations of how things work or why something has occurred. Reasoning talk also allows them to justify their own and others' actions and responses to events, and to negotiate their roles in play and other activities. Reasoning talk involves the use of 'why' and 'how' explanation-seeking and other wh-questions (see Resource # 1). Answers to explanation-seeking questions often contain the word 'because'.

Reasoning talk prompts young children to go beyond what they can see or experience directly and to develop an understanding of the causes and effects of behaviours, actions and events. An understanding of cause and effect enables children to think logically in order to solve problems and also to predict and hypothesise. Reasoning talk is central to learning in STEM (science, technology, engineering, mathematics), as it enables children to seek explanations and justify why things have occurred.

### When do children start to use reasoning talk?

Children's understanding of cause and effect starts to develop in infancy, with their understanding of physical causality ('when I do this, that happens'). Research shows that by the age of 2 years, children can understand the reasoning talk of others. At around age 2½, children begin to use Why questions to seek explanations (see example 1), and our observations in Toddler TaLK capture a steady increase in children's use of explanatory talk from this age. By the time they turned 3½, nearly 70% of the Toddler TaLK children were using explanatory talk, both to seek and to provide explanations (see example 2).

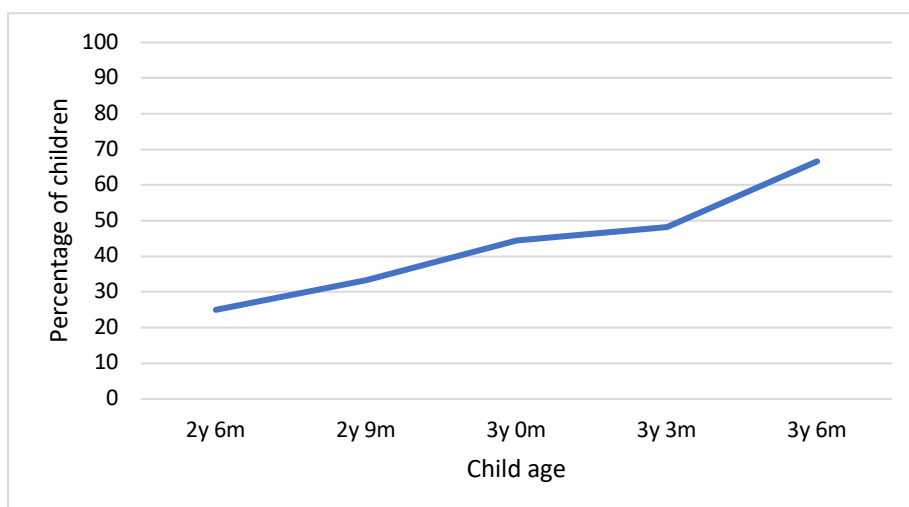


Figure 5.1: Development in Toddler TaLK children's use of Reasoning talk from 2½ to 3½ years.

## Children’s use of reasoning talk in practice

Example 1	Interpretation
<p>Kate (3y) is playing in the block corner with other children. They are building a bridge.</p> <p>Kate: We are angry.</p> <p>Educator: Why?</p> <p>Kate: <u>Because</u> the bridge is falling down.</p>	<p>Kate is using reasoning talk to explain the reason for her emotions. Her explanation draws a logical connection between a change in the environment and an emotion, and shows Kate’s ability to understand cause and effect. The example aligns with EYLF’s explanation that in play-based learning "children integrate their emotions, thinking and motivation" (EYLF, p. 8).</p>
Example 2	Interpretation
<p>Joseph (3y 3m) and Ivan (3y 4m) are playing in the sandpit.</p> <p>Ivan: What’s that?</p> <p>Joseph: It’s my truck.</p> <p>Ivan: I see a concrete mixer.</p> <p>Joseph: I need to dig a hole.</p> <p>Ivan: <u>Why?</u></p> <p>Joseph: <u>Because</u> someone is stuck in the hole.</p> <p>Ivan: Oh no. I’ll help.</p> <p>Joseph: I got stuck.</p> <p>Ivan: Where are you?</p> <p>Joseph: In the desert.</p>	<p>Joseph and Ivan are using reasoning talk to request and provide a reason for their actions during play. Ivan’s Why-question and Joseph’s use of ‘because’ show the children’s ability to seek and give explanations. Through this important skill of inquiry, children “develop understandings of themselves and their world through active, hands-on investigations” (EYLF, p. 50, Outcome 4: Children are confident and involved learners).</p>

### Educators can encourage children to use reasoning talk by:

- Asking ‘why’ and ‘how’ questions that invite children to explain their actions, perspectives and events. Using phrases such as ‘I wonder why that happened?’ and ‘Why do you think he is feeling sad?’ not only encourages children to provide explanations, but also draws inner cognitive states (Resource # 2) and encourages children to work through everyday problems.
- Providing explanations when children ask Why questions.
- Providing explanations about how things work during science learning experiences and following up by asking Why questions to encourage children themselves to provide explanations too. This extends the conversation and engages young children in learning. For example:
  - Educator: It’s not sunny anymore.
  - Child: Why?
  - Educator: The sun has gone behind the clouds. I wonder why it is getting cloudy? What do you think?
- Explaining and asking children to discuss ‘cause and effect’ relations in stories and during play.

## **How does reasoning talk support learning in early childhood services?**

Reasoning talk promotes important learning dispositions in children, especially “flexibility, associated with consideration of multiple points of view and ways of thinking; problem solving and questioning, associated with posing problems and questions, and making causal connections between people, events and situations” (EYLF, p. 67).

When children “explore, infer, predict and hypothesise in order to develop an increased understanding of the interdependence between land, people, plants and animals” (p. 43), they demonstrate their capacity to be “connected with and contribute to their world” (Outcome 2).

Reasoning talk is central to children becoming confident and involved learners (Outcome 4). This involves “thinking skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating” and “trial and error to explore different possibilities through ‘cause and effect’” (p. 51). Explaining, hypothesising, speculating, inquiring are important strategies educators use to extend children’s learning (p. 22), which includes “joining in children’s play and modelling reasoning, predicting and reflecting processes and language” (p. 54).

## **How does reasoning talk support learning when children start school?**

When children start school, they are expected to “use oral language to reason” and “to persuade, negotiate, give opinions or discuss ideas”. In this way, they are demonstrating and building on their ‘Oral language and communication skills’ (ENE-OLC-01). Opportunities to “reason using background knowledge as to why a character has acted in a certain way” and to discuss how various language, pictures and other features in texts work foster children’s ability to understand and respond to literature (ENE-UARL-01).

Reasoning talk also helps children show and build on their capacity in maths and science. For example, in Early Stage 1, students “investigate possibilities and solutions individually and in collaboration with others”, “describe how objects move and observe the effects of push and pull forces” and “identify daily and seasonal changes in the environment” (NESA, 2012, Science & Technology K-6, Early Stage 1 Statement). Working mathematically also involves “communicating their thinking and reasoning coherently and clearly” (MAO-WM-01) as well as reasoning about number relations (MAE-CSQ-01).