

Helping your child with reasoning in Maths

What is reasoning in mathematics?

Reasoning mathematically at EYFS is: beginning to explain why (justification) and prove why something does/does not happen (proof).

Why should you help your child to reason?

Research by Nunes (2009) says that the 'ability to reason mathematically is the most important factor in a pupil's success in mathematics... Such skills support deep and sustainable learning and enable pupils to make connections in mathematics.

Creating and thinking critically at home

- Use language of thinking and learning - think, know, remember, forget, idea, make sense, plan, learn, find out, figure out, try to do
- Model being a thinker, showing that you don't always know, are curious and sometimes puzzled, and can think and find out.
- Encourage different thinking: what else is possible?
- Value questions and many responses without rushing toward answers too quickly
- Support your child's interests over time, remind them of previous approaches and encourage them to make connections between their experiences.
- Encourage your child to learn from their siblings.
- Build opportunities for your child to play with the materials before using them in planned tasks
- Model the creative process, showing your thinking in as many possible ways forward
- Show and talk about strategies - how to do things - including problem-solving, thinking and learning.

Challenge your child to think and talk about their learning process. Use questions such as:

- How did you do that?
- How else could you have done that?
- Who did that a different way?
- What could you do when you are stuck on that?

Travelling to school

- How shall we travel to school? Why?
- What is the same about these houses?
- What is different about these houses?
- What is similar about these cars?
- What is different about these cars?

In the home

- Collect some buttons; ask your child: Which one is the odd one out? Why? What do they have in common? Ask your child to sort them, e.g. how many holes, colours or shapes?
- Pick three toys from your child's toy box. What do the toys have in common? Sort into groups (no more than two to start with) and ask why they have sorted the toys in that way (identifying the characteristics of each set).
- Collect a pile of socks from your laundry basket. Ask your child, 'What is similar, what is different?' Please help them to compare using one of the following criteria: size, colour, use, materials, parts or shape. After playing the game, sock snap with your child.
- What do we need to set the table? How shall we arrange the cutlery and plates? Where will everyone sit? Why?