

Helping your child with reasoning in mathematics

National Curriculum

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics,
- **reason mathematically**
- can **solve problems**

What is reasoning in mathematics?

Reason mathematically in mathematics is: following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

Why should you help your child to reason?

The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. Research by Nunes (2009) says that '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

- Encourage divergent thinking: what else is possible
- Support your child's interests over time, remind them of previous approaches and encourage them to make connections between their experiences
- Model the creative process, showing your thinking in as many possible ways forward
- Give reasons rather than directive 'rules' for any limits on your child's activities
- Be a sensitive conversational partner and co-thinker
- Show and talk about strategies - how to do things - include problem solving, thinking and learning.

Challenges your child to think and talk about their own learning process with 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?
- Convince me you are right.
- Can you create a similar problem for me?



