

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 at Year 2 is: conjecturing relationships and generalisations, and justification or proof using mathematical language.

Why should you help your child to reason?

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

- Use language of thinking and learning – think, know, remember, forget, idea, makes sense, plan, learn, find out, figure out, trying 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 divergent thinking: what else is possible
- Value questions, and many responses, without rushing towards 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
- Aim for a balance of structure and freedom, guiding but not controlling your child's learning
- 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
- 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:

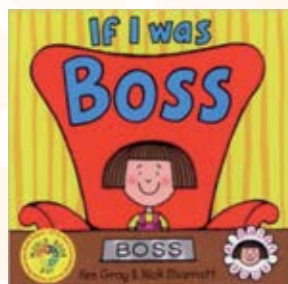
- How did you do that?
- How else could you have done that?
- Who did that a different way?
- What could you do when you are stuck on that?



Activities and ideas to help your child with reasoning at home

Reasoning in Stories

When reading with your child look for opportunities to practise reasoning



The following activities link to the book:

If I was Boss by Kes Gray and Nick Sharratt

Daisy is bored of tidying up and she imagines what it would be like to be boss. If you were boss for the day what would you do? What changes would you make? What would you keep the same? Is it easy being the boss?

If you were God what would you do?

If you were the teacher what would you do?

If you were the head teacher what changes to the school would you make?

Why?

Decisions, decisions

Tell your child that he/she is going to make a decision about something but they must come to this decision after they have considered a range of reasons and used their reasoning skills. Emphasise that they cannot make this decision on guess work.

Things they could consider are: weather conditions, his/her behaviour, whether work they have tidied up and so on. Encourage your child to explain their reasoning as well as their decisions.

Shall we go to the park today?

What shall we have for lunch today?

For further information visit www.bexleyeis.co.uk

Walking to school

How shall we travel to school today?

Why?

Which route do you want to take? Why?

Which will be the quickest?

Which will be the slowest?

Which car do you like?

Why not this one? How are these cars similar?

How are these cars different?

In the home



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) ask why he/she has sorted the toys in that way (identifying the characteristics of each set).

Which set has the least in? Which set has the most in? How else could you group your toys?

In the kitchen

Collect some different chocolate bars; 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. size, flavour, added ingredients etc.

Decisions, decisions: which is the best container to store ... in?

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