

Helping your child with reasoning in mathematics

EYFS

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Development Matters EYFS

Thinking and reasoning skills are not truly defined in only one area of the early learning goals but appear and overlap in many aspects of the 'Good Levels of Development'.. Thinking and reasoning skills are crucial to the characteristics of effective learning – creating and thinking critically and to communication and language – understanding and speaking and should be developed alongside the mathematics.

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 '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.

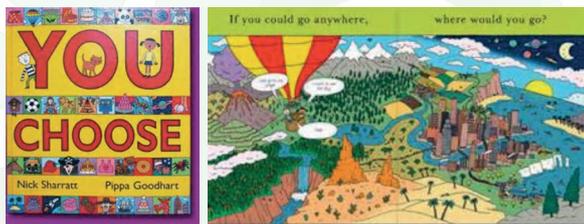
Challenge your child to think and talk about their own learning process with questions such as:

- 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:

You Choose by Nick Sharratt

If you could go anywhere, where would you choose? Why?

Any page – which one? Why?
Why not this one?

Pick two, what do they have in common? What is different? Which one does he/she like the least? Which one does he/she like the best? Which one do you think your friend will like the best? Why? Which ones would be best for a sunny day? Which ones would be best for a rainy day?

Put the pictures into two groups. Name the groups. What doesn't fit into the group? Find the largest, smallest, shortest, tallest, heaviest, lightest object.

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? 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) ask why he/she has 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?' Help them to compare using one

of the following criteria: size, colour, use, materials, parts or shape.

After play the game sock snap with your child.

In the kitchen / dining room

What do we need to set the table?

How shall we arrange the cutlery and plates?

Where will Mummy sit?

Why?

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