

## Helping your child with reasoning in Mathematics

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 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 different 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
- 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 – include problem solving, thinking and learning.
- Challenge your child to think and talk about their own 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?



## Activities and ideas to help your child with reasoning at home

### 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) 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.
- What do we need to set the table? How shall we arrange the cutlery and plates? Where will everyone sit? Why?

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