

Helping your child to solve problem in mathematics at home

EYFS

Children develop quickly in the early years, they are born ready and eager to learn. They actively reach out to interact with other people, and in the world around them. A goal in a child's early education is to foster the characteristics of effective early learning by playing and exploring, active learning and creating and thinking critically. Mathematical problems will have often occurred incidentally during activities and role play. This should still be encouraged. Maths problems can be inspired from my daily life, rhymes, hobbies, stories or their favourite film.

For our youngest children the process of making decisions about the approaches and material are just as important as the mathematics that they do. As a parent you need to challenge their choices or methods, get them to explain their thinking as well as connect what they already know with new situations. This will also help to support development in communication and language skills.

Characteristics of effective learning that support problem solving are:

1. **Playing and Exploring – Engagement:**

Finding out and exploring and being willing to have a go.

2. **Active Learning:**

Being involved and concentrating, keeping trying and enjoying achieving what they do.

3. **Creating and Thinking Critically – Thinking:**

Having their own ideas, making links and choosing ways to do things.

Problem solving strategies

The use of strategies is part of the process of problem solving and an understanding of specific problem solving strategies helps to make problems clearer.

Guess (this includes 'guess and check' and 'guess and improve')

Act it out (explore, play and use equipment)

Draw (this includes drawing pictures and diagrams)

Think (this includes using skills you already know)

How do I get my child to think, reason and explain?

Encourage your child to explore and show your own interest in discovering new things. Help your child as needed, to do what they are trying to do, without taking over or directing. Talk about how you and your child could get better at things through effort and practice, and what we can learn when things go wrong. Model being a thinker. Show that you don't always know, are curious and are puzzled, and can think and find things out.

The quality of questioning is crucial in helping pupils develop mathematical ideas and improve their thinking skills. Open questions provide a greater challenge to your child but will also allow them to answer at their own level. If they get stuck try not to jump in with the answer, give them time to think things through and try and talk more about the process than products. The following type of questions will help your child to think and explain about the process rather than just achieving the answer.

How can we get started on this problem?

What materials could we use?

Does it make sense? Why?

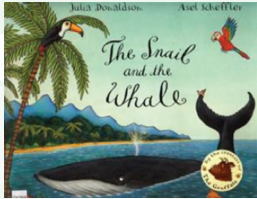
Can you explain what is happening when ...?

What have you found out?
How did you do that?
What could we look at next?
How do you know there are 5?

Activities and ideas to help your child with problem solving at home

Problem solving in Stories

When reading with your child, look for opportunities to practise problem solving.



The following activities link to the book: The Snail and the Whale By Julia Donaldson
Sort the animals into those that you would find on the land, in the sea or in the air.

How many ... snails on the rock?

How many more...?

How many penguins on the iceberg? How many seals on the iceberg? How many are there altogether? How many animals are there in the sea? How many on the land? How many altogether?

How many tails on the fish? How many fins? How many legs on a crab? How many legs on two crabs? How many boats? How many people? How many people could fit into the boat?

How long is the whale? (Compare with the size of people and cars). Use snail lengths to measure objects. How many snail lengths? How many lengths of a child is a whale? How many snails could fit on a whale's tail?

Daily life opportunities

In the kitchen

How many squares, triangles and rectangles can you see in the kitchen?

After making biscuits with your child you could ask the following questions: How many biscuits

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have we made? If I eat one, how many would be left? If we share the biscuits how many will we have each?

Have we got enough apples for everyone? Count them.

If we set the table for 4 people, how many knives and forks will we need?

Make a rocket out of old recyclable materials from the kitchen. Can they name the 3D shapes such as cube and cuboid and cylinder?

In the bathroom

How many cups will it take to fill this container? How many cups will it take to fill the sink? Count brush strokes when brushing teeth.

In the bedroom

How quick can you put your socks on? Can you do it quicker than one minute? Create a race for getting dressed. Who is the quickest? Who is the slowest?

Match pairs of socks. Can they find the same pair? Count in twos

Get three bears; can they put them in order of size? Which bear is the tallest? Which bear is the smallest?

In the garden

How many strides to the garden gate?

Give your child a bucket of water and a paint brush. Can they write their numbers up to 10 on the fence or on the patio?

Build a ramp, at one end place three cars alongside one another. Which car goes down the ramp the quickest? \



the ramp the slowest?

Hide different coloured pipe cleaners around the garden or house. Pretend that they are caterpillars. Get the children to hunt for them. When they return with one get your child to explain where they found them. For example: under the bench (enc
prepositions).



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