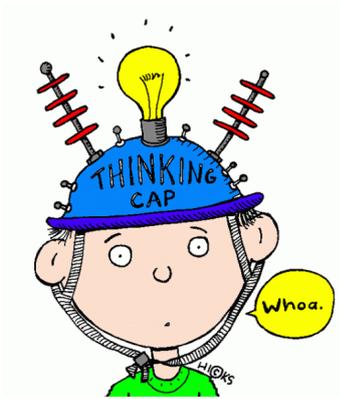
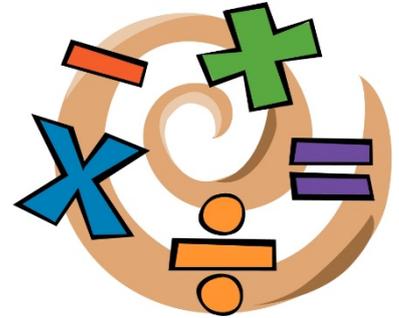


This term's learning focus: Using reasoning in mathematics

This term, our school improvement focus will be on improving children's use of reasoning within their maths lessons. Reasoning is fundamental to deepen children's understanding of maths. Reasoning is when we investigate and explain why something is correct or incorrect; it encourages children to explain and verbalise their thinking and reflect on their solutions. In school, we will be using different questions stems each week to encourage our children to reason and explain.



Why are we focusing on reasoning in mathematics?

- Reasoning encourages children to not just accept one answer and give a **convincing answer** that explains how or why a conclusion has been reached,
- It encourages children to use correct mathematical vocabulary,
- Children become more confident mathematicians and are more willing to investigate and solve problems, knowing that there might be more than one answer.

How can you help at home?

Each week we will send home a question that looks similar to the one below. Use the question stem to have a discussion with your child and encourage them to explain their thinking. Over the page, there are also some ideas of activities that you can try out to encourage your children to reason and the types of questions you can ask them.

This week's reasoning activity

Discuss the questions below and give an answer

'Always, Sometimes or Never':

1. If you add 1 to an odd number, you get an even number.
2. If you add two odd numbers, you get an odd number.

Explain how you know. Can you prove it?

Things you could try at home:

- How can we fit all this into the car in a logical way?
- I need to paint the fence panels; if 1 tin covers 1.5 panels, how many tins do we need to paint our fence?
- Follow recipes – increase the amounts by halves – what will the new amounts be?
- Pretend you are going to rearrange the furniture in a room; reason about where the items will fit – use estimating techniques. Move onto measuring with a tape measure. Ask your child to help you and ask what will happen if I.....
- Travelling in the car, estimate with your child the length of a journey – time it and reason how estimates can improve if we know the mileage of different journeys based on this estimate and timing.

Questions you can use when tackling maths together:

What will help you solve the problem?

Is it a reasonable answer? Can you check it?

How do you know?

Is there another way to do that?

Can you tell me why you think that?

How could we be more certain?

Can you describe your method/pattern/rule?

Would it work with different numbers?

If you were doing it again, what would you do differently?

Is this always true?