

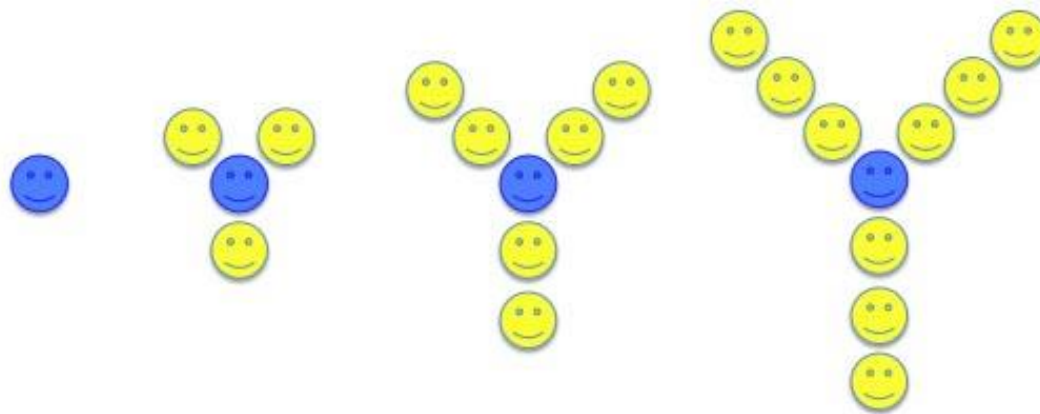
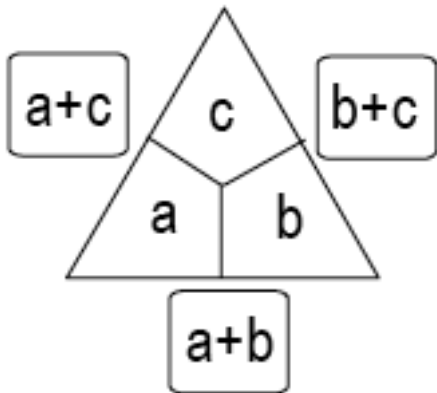


Maths at St Thomas More



It is all about...

Fluency, Reasoning and Problem Solving



Number Sense



We want children to be creative and flexible in their work with numbers – not blindly follow methods

To build children's number sense we teach them to visualise problems, use hands-on equipment and diagrams.

This starts in early years KS1 where children use Numicon, number beads, 100 squares, multilink, counters, Deines blocks, Cuisenaire rods etc and this continues into KS2 where children build on their understanding using these resources and more.



Mental Strategies for fluency

- In KS2 children further develop ways to solve problems mentally

If I give you the calculation $19 + 7$

Can you tell me, without writing it down, how you worked it out?

I did this with a Year 3 class last week and they came up with five different strategies.

Can you think of any?

Why is this important?



- They could see this as a puzzle – they enjoyed thinking about different way to play with the calculation
- It makes them think and with that comes understanding of numbers
- Maths becomes creative and flexible
- They are reasoning and developing fluency and with that comes confidence and the ability to use formal methods accurately.
- Now I am going to give you another example. Again, please do not do any formal calculations.

What is 18×5 ?

- How did you work it out?
- The teacher / pupil can then draw a visual to show their strategy



Flexibility and vision



- We talk about numbers working for us – children are Maths gymnasts or jugglers.

Parents can encourage “Number Talk” with children

- Challenge them to come up with different methods.
- Can they draw a visual to solve a problem?
- Can they prove that they are correct?

Exploring problems



- 100 square game – a game to show children arrays of numbers and work on a strategy.



Key learning points

- 10s - underlines our number system so **children's sense of 10s** is key to their ability to progress
- **Vocabulary** – children cannot reason if they do not have the words to explain
- **Explaining** – How do you know? Can you prove you are right?
- Understanding of fractions, decimals and percentages and their **equivalence**.

Children in control of numbers. Maths is flexible and creative.

Formal methods



- It is important that children use formal methods and we teach these throughout the school.
- Number sense and fluency will give children the confidence, control and understanding of formal methods AND the ability to check they are correct.
- If children understand what they are doing, they will be confident, ENJOY Maths, be able to APPLY their Maths and be CREATIVE.

Belief



- Research has shown that, given the correct teaching, children who know that we – teachers and parents – believe in them will achieve at a greater pace.
- Study – I am giving you this feedback because I believe in you...
- Parents who tell their children “I was never any good at Maths” could adversely affect their child’s belief in their ability.
- We believe all children can achieve at Maths

Times Tables



- By the end of Year 3, all children should know their times tables...
- What is important is that they have the strategies to work out any of their times tables eg $\times 4$ is double and double again.
- What is not so important is learning them by rote – this is a test of memory rather than Maths. We want understanding.
- We also know that speed tests, while useful, can cause anxiety and stress even to able mathematicians and is not necessarily an indication of a child's ability.
- So when learning times tables... talk about strategies, and how you can work them out... speed will quickly follow.

Fractions, decimals and percentages

- As children move through the school their manipulation of fractions, decimals and percentages is a key element
- Again their ability to be fluent – be able to visual, and “play” with fractions, decimals and percentages - is vital to their learning.
- The new Curriculum places increased emphasis on fractions (including decimals and percentages)

Message to parents

- Be positive about Maths
- Ask your children questions around their Maths
 - How did you know that? How did you do that?
 - Can you show that problem as a diagram / can you draw it?

Website:

www.familymathstoolkit.org.uk from National Numeracy

Fantastic resource – with games and links to other websites – and lots of advice on how parents can support their child at home.

New Testing for Maths



- Arithmetic replaces the mental maths paper – 40 questions in 30 minutes. Questions will assess number, calculations and fractions (including decimals and percentages).
- Problem solving – a key priority in the new SATs papers – two papers on contextual Maths.



Mathletics and Websites

- All KS2 children have Mathletics subscription for use at home. This included Live Mathletics – playing against children from around the world in a safe environment – and activities based on the National Curriculum.

Try some of the resources here...

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