Supporting Primary Children in Mathematics

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Write down two numbers which...

- Add to give 2
- Subtract to give 2
- Multiply to give 2
- Divide to give 2

Challenge yourselves and be imaginative!



This evening we will

Bucks, Berks and Oxon

- Consider the three aims of the National Curriculum and what good maths learning looks like
- Gain an appreciation of what Teaching for Mastery is
- Exploring how we can support our children to develop their mathematical thinking



Fluency

Reasoning

Problem Solving



Mathematicians	Learners of mathematics in schools
Enjoy maths because they experience success	May experience repeated failure
Work on long and complicated problems that involve combining many different areas of maths in meaningful, stimulating contexts	Predominantly work on repetitive practising of isolated procedures and learning facts (content)
Know how to problem solve	Are flummoxed when the maths is 'hidden' in a problem
Use their initiative	Are told how to work and what they need
Ask (and then answer) intriguing questions	Answer someone else's questions
Work together – to learn from each other, increase the quality of ideas and share the euphoria of problem solving	Work in isolation
Estimate	Calculate rather than estimate because they lack a 'feel for number'

Paraphrased from Boaler, J. (2009) The elephant in the classroom

Let's try some problem solving and reasoning.....

How can you convince me that you have not missed anyone out or counted anyone twice?



Sending Cards



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'Shanghai/Singapore Maths' = Teaching Maths for Mastery

Why are we doing it?

What does it look like?

NCETM website (National Centre for Excellence in Teaching Mathematics)



What is Mastery?

Means that learning is sufficiently: Embedded Deep Connected Fluent In order for it to be: Sustained Built upon Connected to



How do we teach for Mastery?

- •Representing the mathematics in ways that are accessible
- •Whole Class Ping Pong style
- Avoid cognitive overload
- •Repetition and stem sentences
- •Learning facts to automaticity
- •Variation and intelligent practice







Intelligent Practice

Compare the two sets of calculations What's the same, what's different?

Set A	Set B
120 - 90	120 - 90
235 - 180	122 - 92
502 - 367	119 – 89
122 – 92	235 - 180
119 - 89	237 - 182
237 - 182	502 - 367



How can you support your children with Maths?

- Present a positive image
- Use everyday opportunities to develop their mathematical thinking – estimating, calculating, explaining and reasoning
- Play games with them which involve strategy, reasoning or calculating



How can you support your children with Maths?

- Help them by questioning don't do it for them
- Help them learn by 'testing them'
- Drawing pictures or using objects to help them model the problem is good!
- Encourage them to ask for help if they are unsure

