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Salop & Herefordshire Maths Hub Primary Update 30 January 2018

[Observing Primary Maths Specialist Teachers from Shanghai](#)

We have thanked Manda and Chen on behalf of the 300+ teachers that observed their lessons on Multiplication over the past fortnight. It was interesting to see how the pupils progressed over the series of carefully sequenced lessons. The focus on depth, with one step per lesson, embracing procedural and conceptual variation was fascinating. Thank you to Jasmin, Julie and Cathryn from our Teaching for Mastery team, as well as all of the staff at Oakmeadow School for their warm welcome to Manda, Chen and all visiting teachers.



Teaching for Mastery (TfM)

2018-19 Work Groups

To register an interest in our free Primary Teaching for Mastery work groups for 2018-19, please confirm your details on the [booking form](#). In addition to the highly regarded professional learning for teachers, all participating schools receive £1000 towards cover costs, as well as up to £2000 match funding for text books from the approved DfE list.

What Makes an Excellent Lesson Design

Schools participating in our Teaching for Mastery work groups, please note that the Year 1 and 2 work group is now full, and we only have 4 places remaining for the other groups:

[Years 1 and 2](#) - 6th March & 20th March - Much Wenlock - FULL

[Years 3 and 4](#) - 21st March & 25th April - Oswestry

[Years 5 and 6](#) - 25th April & 27th June - Shobdon

Year 5-8 Continuity Work Groups

Have you read the EEF 'Improving Mathematics in Key Stages Two & Three' Report?

1 Use assessment to build on pupils' existing knowledge and understanding

- Assessment should be used not only to track pupils' learning but also to provide teachers with information about what pupils do and do not know.
- This should inform the planning of future lessons and the focus of targeted support.
- Effective feedback will be an important element of teachers' response to assessment.
- Feedback should be specific and clear, encourage and support further effort, and be given promptly.
- Teachers not only have to address misconceptions but also understand why pupils may persist with errors.
- Knowledge of common misconceptions can be invaluable in planning lessons to address errors before they arise.

2 Use manipulatives and representations

- Manipulatives (physical objects used to teach maths) and representations (such as number lines and graphs) can help pupils engage with mathematical ideas.
- However, manipulatives and representations are just tools: how they are used is essential.
- They need to be used purposefully and appropriately to have an impact.
- There must be a clear rationale for using a particular manipulative or representation to teach a specific mathematical concept.
- Manipulatives should be temporary; they should act as a 'scaffold' that can be removed once independence is achieved.

3 Teach pupils strategies for solving problems

- If pupils lack a well-rehearsed and readily available method to solve a problem they need to draw on problem-solving strategies to make sense of the unfamiliar situation.
- Select problem-solving tasks for which pupils do not have ready-made solutions.
- Teach them to use and compare different approaches.
- Show them how to integrate and use their existing knowledge to solve problems.
- Use worked examples to enable them to analyse the use of different strategies.
- Require pupils to monitor, reflect on, and communicate their problem solving.

4 Enable pupils to develop a rich network of mathematical knowledge

- Emphasise the many connections between mathematical facts, procedures, and concepts.
- Ensure that pupils develop fluent recall of facts.
- Teach pupils to understand procedures.
- Teach pupils to consciously choose between mathematical strategies.
- Build on pupils' informal understanding of naming and proportionality to introduce procedures.
- Teach pupils that fractions and decimals extend the number system beyond whole numbers.
- Teach pupils to recognise and use mathematical structure.

5 Develop pupils' independence and motivation

- Encourage pupils to take responsibility for, and play an active role in, their own learning.
- This requires pupils to develop metacognition - the ability to independently plan, monitor and evaluate their thinking and learning.
- Initially, teachers may have to model metacognition by describing their own thinking.
- Provide regular opportunities for pupils to develop metacognition by encouraging them to explain their thinking to themselves and others.
- Avoid doing too much too early.
- Positive attitudes are important, but there is scant evidence on the most effective ways to foster them.
- School leaders should ensure that all staff, including non-teaching staff, encourage enjoyment in maths for all children.

6 Use tasks and resources to challenge and support pupils' mathematics

- Tasks and resources are just tools - they will not be effective if they are used inappropriately by the teacher.
- Use assessment of pupils' strengths and weaknesses to inform your choice of task.
- Use tasks to address pupil misconceptions.
- Provide examples and non-examples of concepts.
- Use stories and problems to help pupils understand mathematics.
- Use tasks to build conceptual knowledge in tandem with procedural knowledge.
- Technology is not a silver bullet - it has to be used judiciously and less costly resources may be just as effective.

7 Use structured interventions to provide additional support

- Selection should be guided by pupil assessment.
- Interventions should start early, be evidence-based and be carefully planned.
- Interventions should include explicit and systematic instruction.
- Even the best-designed intervention will not work if implementation is poor.
- Support pupils to understand how interventions are connected to whole class instruction.
- Interventions should motivate pupils - not bore them or cause them to be anxious.
- If interventions cause pupils to miss activities they enjoy or content they need to learn, teachers should ask if the interventions are really necessary.
- Avoid 'intervention hogging' - interventions do not always need to be time-consuming or intensive to be effective.

8 Support pupils to make a successful transition between primary and secondary school

- There is a large dip in mathematical attainment and attitudes towards maths as children move from primary to secondary school.
- Primary and secondary schools should develop shared understandings of curriculum, teaching and learning.
- When pupils arrive in Year 7, quickly obtain a good understanding of their strengths and weaknesses.
- Structured intervention support may be required for Year 7 pupils who are struggling to make progress.
- Carefully consider how pupils are allocated to maths classes.
- Setting is likely to lead to a widening of the attainment gap between disadvantaged pupils and their peers, because the former are more likely to be assigned to lower groups.

The three work groups below include professional development on 7 of the 8 report recommendations, to help pupils with coherent primary to secondary maths progression:

- 1) [Mastering Mathematics Through Deep Conceptual Understanding](#)
- 2) [Bar Modelling and Multiplicative Reasoning](#)
- 3) [Problem Solving and Reasoning](#)

Please let your local Secondary School know when booking for one of these work groups - pupils will gain more where there is a coherent approach in transition.

EYFS Development

We are taking [bookings](#) for the 2 full days and 2 half days [Hereford based work group](#) on 28th March and 18th April, a lesson observation on the morning of 25th April **or** 23rd May, followed by another half day on 27th June.

Subject Knowledge Enhancement (SKE) - Teaching Assistants

We hope to be able to confirm dates for additional Summer Term work groups in Bridgnorth, Hereford, Shrewsbury, Telford and Wem soon. All of the initial 8 work groups are now fully booked.

Network Meetings

Herefordshire

1.30pm - 3.45pm Tuesday 6 February

St Mary's Primary School, Fownhope,

- Meet the challenge of working with a wide attainment range in one class (including interventions to narrow this range)
- Dealing with very large numbers

Please confirm attendance using the [booking form](#).

Shropshire

Ludlow

Monday 23 April 2018

Bishop Hooper CE Primary School

Shrewsbury

Tuesday 24 April 2018

Shrewsbury Training and Development Centre

Oswestry

Thursday 25 April 2018

The Marches School

Click to [BOOK](#) on to any of the Shropshire meetings.

Telford

Date and venue to be confirmed

Please email for further details: cpdschoolimprovement@telford.gov.uk

Booking Form

Please use the [online booking form](#) for bookings. All work groups are **free**, with cover costs of up to £180 per day paid for teachers in their first two years of teaching.

Work groups will be added to the drop down menu on the form when dates and venues are confirmed.

Inclement Weather

Should any workshops need to be cancelled on the day, we will notify via [Twitter](#), which also has a feed on our [website](#).

Please check either Twitter or our website should you have any doubts whether the workshop will be running because of the weather conditions. The work group will be running if there is no message to inform that it has been cancelled.

Useful Links

- [Assessment Materials - Teaching for Mastery](#)
 - [Calculation Guidance](#)
 - [EEF Report - Improving Maths in Key Stages Two and Three](#)
 - [Marking Guidance](#)
 - [Maths Glossary](#)
 - [NCETM Maths Podcasts](#)
 - [NCETM Qualifications and Curriculum Microsite](#)
 - [NRICH Teacher Newsletters](#)
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Please use the [online booking form](#) for all bookings, unless otherwise stated

Check our website: www.mathshubs.org.uk/salopandhereford

Follow us on Twitter: [@SandH MathsHub](#)

Email mathshub@tpstrust.co.uk if you wish to be added to our database to receive fortnightly updates directly - stating your preference for Primary and/or Secondary.

Can't find the answers?

If you are unable to find answers to your queries from our work groups page: www.mathshubs.org.uk/salopandhereford/work-groups please email Alison Osborn, our Maths Hub coordinator: mathshub@tpstrust.co.uk

Please follow [@SandH_MathsHub](https://twitter.com/SandH_MathsHub) for updates.

Graham

Graham Charles

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