Welcome!

Head teachers' Workshop
Cambridge Maths Hub
Mastery Conference

PRESENTED BY:

MRS CORDELIA MYERS,

LEAD TEACHER, CAMBRIDGE MATHS HUB

MRS DIANE HAWKES

MASTERY LEAD, CAMBRIDGE MATHS HUB

10th October 2016

Aims of this session

- To give information about the National and Cambridge Maths Hubs
- To share information about current CPD availability
- To share how Mastery is being implemented in Cambridgeshire schools
- To think about some possible positives and negatives of introducing Mastery into our schools
- To look at Ofsted's view on Mastery
- To think about how we might prepare for an inspection

Reuben Hersh, a philosopher and mathematician, has written a book called ‘What is Mathematics, Really?’ in which he explores the true nature of mathematics and makes an important point - people don’t like mathematics because of the way it is mis-represented in school. The maths that millions of school children experience is an impoverished version of the subject that bears little resemblance to the mathematics of life or work, or even the mathematics in which mathematicians engage.

The Elephant in the classroom, Jo Boaler

“No matter how well organised or detailed the curriculum, how grand or well resourced the building, what really matters most in a child’s education is the quality of the teaching. The challenge for the nation is to maintain a supply of outstanding teachers so that every child has the opportunity to be taught by inspirational, skilled teachers throughout their time in school.”

Carter review of ITT

Maths Hubs across England

The Cambridge Maths Hub

Staff

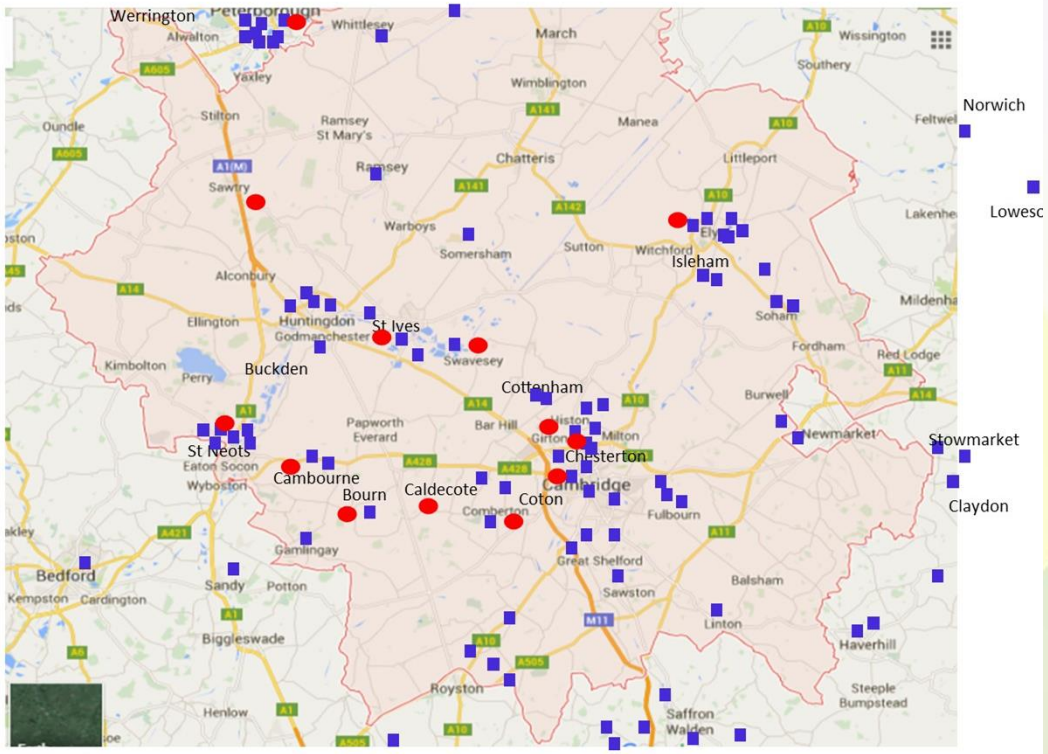
- Cordelia Myers, Maths Hub Lead
- Geetha Dorairaj, Projects Co-ordinator

2016-2017

- Sue Southward, Comberton, 30%
- Darroch Allen, St Peters, 30%
- Rosey Durham, 20%, Priory Jns
- Kate Bell, 12%, Longsands Post 16 rep
- Jo Harbour, 10%, Mayfield Primary, Mastery Specialist
- Diane Hawkes 12% Head at Little Paxton Primary

Governance and direction

- Strategic Board
- Operations Group



Workgroup Leader School

Workgroup Participant School

Total No. of participating schools : 141

School Type	Total no.of schools in Cambs	Contact with CMH	Percentage
Primary	262	89	33.97%
Secondary	49	33	67.35%
Special	21	7	33.33%
All Cambs Schools	332	129	45.60%

- Data for 20 May 2016
- Teachers who have attended CMH PD (some have attended more than one work group):
- 166 Primary teachers
- 151 Secondary teachers
- 24 Special school teachers
- Total: 341 teachers

Hub Workgroups

- Usually 2 or 3 sessions
- Day, half day or twilight
- Have a gap task
- Have nice refreshments
- Are evaluated by the leader(s)

Problem Solving and reasoning

A Work Group developing the teaching of problem solving through the use of NRICH activities to support reasoning

Dates: 4th Oct, 2nd Nov & 1st Dec
Time: 1.30-3.30pm
Venue: Middlefield Primary School, St Neots

The 3 work group sessions will give opportunity for us to explore NRICH. We will be looking at problem solving activities, having a go at them and including valuable discussion time. These work groups will increase teachers' knowledge of how NRICH works and ways we can use this resource in our school. And its FREE!

Led by: Rosey Durham and Max Hall

Rosey Durham

Rosey works at Priory Junior School and has several years experience teaching across all year groups in Key Stage 2. She has been Maths lead in her school and has completed the MaST qualification. Rosey has joined the Maths Hub team this year as Assistant Maths Hub Lead: Primary Specialist

Max Hall

Max works at The Round House Primary Academy, teaching in year 6. This school is one of five schools in the Diamond Learning Partnership Trust. He also has experience teaching in year 3 and 4.

Max is the Maths lead in his school.

To book a space, email: **admin@cambridgemathshub.org**

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Calculate, Don't Count!

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With the current emphasis on mastery and the importance of developing pupils' deep conceptual understanding and sustained learning, this work group will increase teachers' knowledge and understanding of mathematical structures relating to the four operations. Participants will explore the use of models and representations, including the part whole model, bar models and tens frames.

Participants will also develop their understanding of the use of procedural variation/ intelligent practice to support children's learning by making small connected steps. Following our approaches, children will develop their use efficient strategies to increase fluency in calculating.

This workgroup is suitable for class teachers who want to develop their practice regarding the teaching of calculation and procedural variation and Maths Subject Leaders of schools who want to develop their mastery practice

Led by: Katie Crozier & Claire Gerrard

Katie Crozier

Katie is a lead practitioner in maths at Eynesbury Primary School, St Neots and also teaches at Brampton Village Primary School. She spends her time between the two schools each week, focussing mainly on the teaching of maths and music. Katie completed her MaST course in July 2013 and went on to continue her studies with Northampton University; she has just finished writing her dissertation on multiplicative reasoning to complete her Masters' Degree in Mathematics Education. She has been trained as a Mastery Specialist Teacher by the NCETM and works with the Cambridge Maths Hub to support schools in developing a mastery teaching approach in maths.

Claire Gerrard

Claire is Deputy Head and Maths Leader of Thorndown Primary School in St Ives. She is passionate about inspiring both children and teachers to share her love of maths and firmly believes that, with the right support, everyone can enjoy and succeed in maths. Following her NCETM training as a Mastery Specialist Teacher, Claire has been leading the development of mastery in maths within her school. She has also facilitated a Teacher Research Group, as part of the Cambridge Maths Hub, to support other schools in

FREE

Dates:
19th Oct, 2nd Nov &
7th Dec

Time:
1 pm - 3:15 pm

Venue:
Thorndown Primary School,
St Ives

For bookings email :
admin@cambridgemathshub.org

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Ratio and Proportion

This course will explore Ratio and Proportion as key mathematical ideas over three sessions. There will be gap-tasks between sessions.

- What is Ratio? What is proportion? What is the difference?
- Where are they used in the primary curriculum?
- What models and images support understanding?
- What kinds of problems are involved?

Led by: Ruth Bull

Ruth Bull has worked in Suffolk schools for the past 20 years and is an experienced classroom teacher and subject leader. She worked initially in primary schools in both urban and rural settings and then as a head of department in a popular and very successful middle school. She enjoys maths and is enthusiastic about working with others of all ages to support them with their understanding and to address their needs. Ruth particularly enjoys enrichment activities and recently co-organised a series of Royal Institution maths masterclasses for year eight pupils which were held in Bury St. Edmunds. She currently combines teaching in a village primary school with freelance advisory work.

Dates : **13th September, 27th September, 18th October 2016**

Time: 2:00 pm to 4.00 pm

Venue: Cambourne Village College

FREE!

For bookings email admin@cambridgemathshub.org

Write down 5 mathematical statements about these fairy cakes.

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Maths in stories

Dates:
November 1.30 – 4.00
25th April 1.30 – 4.00
13th June 1.30 – 4.00
18th January 1.30 – 4.00
7th March 1.30 – 4.00

Venue:
Castle School, Courtney Way, Cambridge CB4 2EE

Led by:
Anne Haberfield,
Deputy Headteacher,
Castle school, Cambridge

CASTLE SCHOOL

Overview:

The group will work collaboratively with Karen Scott, Maths Advisory Teacher, to identify mathematical content in written stories. They will:
Develop schemes of work
Develop an assessment framework,
Develop liked resource boxes for each of the stories;
Share ideas for measuring the impact of this on pupils learning;
Share good/outstanding practice between schools;
Develop working partnerships.

Audience : Maths leads in Special School, Teachers and Teaching Assistants working with pupils who have Special Educational Needs, Teachers in Early Years and KS1

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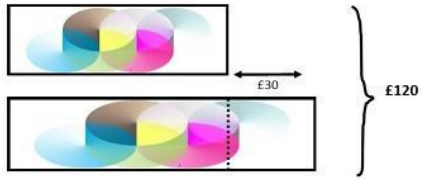
Use of Bar Model

In these sessions we will look at what the bar model is, why it can be so effective and how to use it across the primary maths curriculum. It will have a KS2 focus and include detail on how to use the bar model to support fractions, percentages, ratio and problem solving.

Led by:

Richard Bakker,
KS2 Leader, Caldecote Primary School

Fred and Hilda have £120. Hilda has £30 more than Fred. How much do they each have?



'I am leaving with a bank of learning activities and the confidence to use bar model technique'

- Participant

Dates: 22nd Sep, 3rd Nov, 12th Jan
Time: 1:30 pm – 3:30 pm
Venue: Caldecote Primary School

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Singapore Text Books

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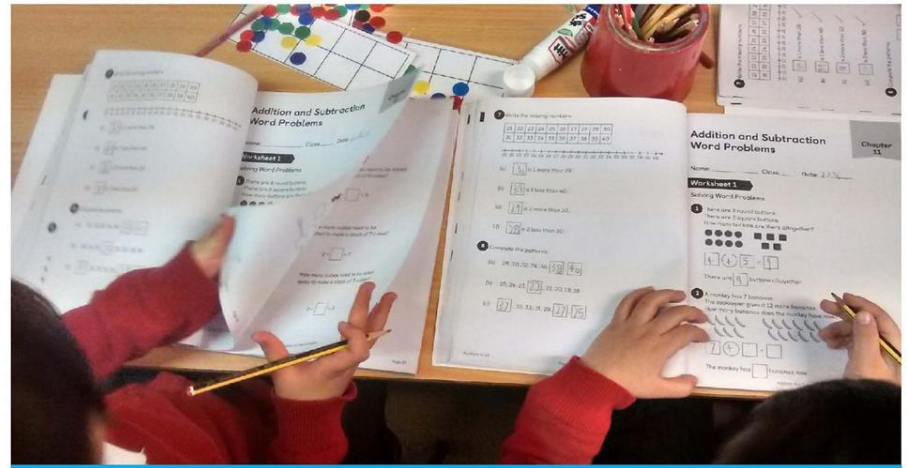

Led by:
Charlotte Mezits & Jenny Williman

At the Spinney we have been trialling Maths - No Problem! textbooks with our Year One class since September 2016. We have been so impressed with them that we are carrying the trial forward for a second year so our Year One and Year Two classes will be using them next academic year. The textbooks are based on methods of teaching maths in Singapore but have been written for the UK National Curriculum. Key principles of the textbooks include working at greater depth and working in mixed ability groups.

In our Work Group sessions we will share some of the methods we are now using for teaching maths, work through some practical examples, summarise the essential components that form a successful maths lesson and discuss teaching struggling learners and advanced learners.

Dates: 26th Sep, 17th Oct, 7th Nov 2016
Time: 3:30 pm - 5 pm
Venue: The Spinney School, Cambridge

For bookings email admin@cambridgemathshub.org

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Mastery in the CMH

- Four specialists chosen last year
- DfE response
- Four more specialists
- 24 Work Groups
- Next year 24 more WGs and 4 new specialists
- Funding for text books

Mastery:
Positives and Negatives

Think about what you have heard from Debbie Morgan.

2 positives
2 negatives

about introducing Mastery into your school

Ofsted!

Summary of Principles of Mastery Maths Teaching

- Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics.
- The large majority of pupils progress through the curriculum content at the same pace.
- Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.
- Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge.
- Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts in tandem.
- Teachers use precise questioning in class to test conceptual and procedural knowledge, and assess pupils regularly to identify those requiring intervention so that all pupils keep up.

Activity

If your staff are using the basic principles of mastery teaching, which parts of the Ofsted Inspection handbook extract will they be satisfying?

- Mark the letters from the handbook on your Mastery principles sheet
- Discuss your findings with a talk partner!

“Ofsted gives further reassurance to schools using mastery approach to mathematics teaching”
Jane Jones HMI, National lead for Mathematics

- 5 mins to read the sheet

She ended her address with an impassioned plea for teachers attracted by the mastery approach to ‘go for it’ in the best interests of their pupils. Her address has been warmly welcomed by the NCETM’s Director, Charlie Stripp:

There can now be no doubt in anyone’s mind that Ofsted is fully supportive of schools changing the way they teach maths, to reflect a mastery approach. We are very grateful to Jane Jones for spelling out so clearly how the mastery approach is completely consistent with the aims of the new maths National Curriculum, and for the immensely helpful advice she gave to headteachers preparing for Ofsted inspections. We hope this will give schools more confidence to take a mastery approach to maths teaching, which, evidence suggests, helps all pupils to improve their understanding of maths.

Thank you!

If you have any questions that we haven’t had time to answer then please leave them on a post-it with an email address

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