

**NOTTINGHAM EDUCATION PARTNERS**

Strategic School Improvement Project 2: Maths

Making every person count in Maths



# PROGRAMME OFFERING

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# Table of contents

Phase	Strand	Programme Title	Programme Dates
PRIMARY	Content specific	Maths Mastery in the Early Years – a focus on transition from F2 to Y1	21 January 2019
		Developing Number Fluency at KS2	20 Sept 2018
		Developing Number Fluency at KS1	27 Sept 2018
		Problem-solving strategies at KS1	17 Jan 2019
		Problem-solving strategies at KS2	24 Jan 2019
		Strategies for Teaching Fractions at KS1	31 Jan 2019
		Strategies for Teaching Fractions at KS2	7th Feb 2019
		Getting to Grips with Ratio and Proportion	16 Nov 2018
		Getting to Grips with Algebra	11 Jan 2019
	Mastery	Getting to Grips with the Maths No Problem Scheme and Way of Working	3 Oct 2018
		Mastery Lesson Design and Planning	8 Oct & 3 Dec 2018
		Differentiation in Mixed-Attainment Classes	19 Oct 2018
		Strategies for using Multiple Representations	7 Nov 2018
		Developing Effective Mastery Assessments	9 Nov 2018
		Modelling and Scaffolding Maths Concepts Effectively	27 February 2019
		Specialist Maths for Teaching Assistants	5 Jun, 29 Jun, 21 Sept, 23 Nov 2018, 18 Jan, 15 Mar 2019
	Metacognition	Building Positive Attitudes and Attributes in Mathematics	5 Oct, 14 Nov, 12 Dec 2018
	Learning Environment	Using Learning Environment and Bookwork Structure to Support Children's Learning	19 November 2018
SECONDARY	Fluency, Problem Solving & Reasoning	Creative Approaches to Developing Mathematics Fluency in Secondary Classrooms	17 Oct, 10 Dec 2018, 13 Feb 2019
		Developing Confident Problem-Solving and Skills at Key Stages 3 and 4	4 Feb & 18 Mar 2019
	Collaborative Learning	Tackling misconceptions, collaboration, independent learning and problem solving in Secondary Maths	4 Oct, 6 Dec 2018, 30 Jan, 7 Mar 2019
PRIMARY & SECONDARY	Intervention	Action Research Workgroup: Pre-teach Intervention	28th Jun, 11 Oct, 21 Nov 2018
	Transition	KS2 to 3 Transition Lesson Study Workgroup	10 Jan, 28 Feb & 26 Mar 2019
	SEND	Lesson Study Workgroup: Supporting Inclusive Classrooms	6 Nov 2018, 11 Feb 2019, 28 Mar 2019
	General	Open classrooms	Various – dates TBC
		Maths Facilitator Skills Training	17 Oct 2018
		In school SLE support	To be agreed with the SLE

# Programme Calendar

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL/MAY
<b>Wed, 19</b> TA MASTERY (SESS 3) 9 – 12 TRENT VINEYARD	<b>Tues, 2</b> PRIMARY MATHS SPECIALIST TEACHER DERBY COHORT (SESS 3) FULL DAY LANDAU FORTE	<b>Tues, 6</b> LESSON STUDY: WHOLE CLASS STRATEGIES TO SUPPORT LEARNING AND BEHAVIOUR 9.30 – 3.30 VENUE: TBC	<b>Mon, 3</b> GETTING TO GRIPS WITH MASTERY LESSON DESIGN (SESS 2) 1.30 – 3.30 VENUE: TBC	<b>Thurs, 10</b> KS2 TO KS3 TRANSITION LESSON STUDY 9 – 12.30 VENUE: TBC	<b>Mon, 4</b> DEVELOPING CONFIDENT PROBLEM SOLVING SKILLS KS3 & 4 3 – 5 VENUE: TBC	<b>Thurs, 7</b> TACKLING MISCONCEPTIONS, COLLABORATION, INDEPENDENT LEARNING & PROBLEM SOLVING 2.30 – 4.30 VENUE: TBC	<b>DATE TBC:</b> APRIL/MAY PRIMARY MATHS SPECIALIST TEACHER NOTTS/DERBY CONFERENCE (FINAL SESSION) VENUE: TBC
<b>Thurs, 20</b> DEVELOPING NUMBER FLUENCY AT KS2 1 – 4 VENUE: TBC	<b>Weds, 3</b> GETTING TO GRIPS WITH THE MATHS NO PROBLEM SCHEME 9 – 12.30 VENUE: TBC	<b>Weds, 7</b> GETTING TO GRIPS WITH USING MULTIPLE REPRESENTATIONS 9.30 – 12 – KS1 1 – 3.30 – KS2 VENUE: TBC	<b>Thurs, 6</b> TACKLING MISCONCEPTIONS, COLLABORATION, INDEPENDENT LEARNING & PROBLEM SOLVING 2.30 – 4.30 VENUE: TBC	<b>Fri, 11</b> GETTING TO GRIPS WITH ALGEBRA 9 – 12.30 VENUE: TBC	<b>Thurs, 7</b> STRATEGY FOR TEACHING FRACTIONS AT KS2 1 – 4 VENUE: TBC	<b>Tues, 12</b> PRIMARY MATHS SPECIALIST TEACHER NOTTS/DERBY (SESS 6) FULL DAY KEGWORTH HOTEL	
<b>Tues, 25</b> PRIMARY MATHS SPECIALIST TEACHER NOTTS COHORT (SESS 3) FULL DAY DIJANOGLY NORTHGATE	<b>Thurs, 4</b> TACKLING MISCONCEPTIONS, COLLABORATION, INDEPENDENT LEARNING & PROBLEM SOLVING 2.30 – 4.30 VENUE: TBC	<b>Fri, 9</b> GETTING TO GRIPS WITH DEVELOPING EFFECTIVE MASTERY MATHS ASSESSMENT 9 – 3.30 VENUE: TBC	<b>Mon, 10</b> CREATIVE APPROACHES TO DEVELOPING MATHS FLUENCY IN SECONDARY CLASSROOMS 9 – 3.30 VENUE: TBC	<b>Tues, 15</b> PRIMARY MATHS SPECIALIST TEACHER NOTTS COHORT (SESS 5) FULL DAY DIJANOGLY NORTHGATE	<b>Mon, 11</b> LESSON STUDY: WHOLE CLASS STRATEGIES TO SUPPORT LEARNING AND BEHAVIOUR 9.30 – 3.30 VENUE: TBC	<b>Fri, 15</b> TA MASTERY (FINAL SESSION) 9 – 1.30PM TRENT VINEYARD	
<b>Thurs, 27</b> DEVELOPING NUMBER FLUENCY AT KS1 1 – 4PM VENUE: TBC	<b>Mon, 8</b> GETTING TO GRIPS WITH MASTERY LESSON DESIGN 9 – 3.30 VENUE: TBC	<b>Weds, 14</b> BUILDING POSITIVE ATTITUDES & ATTRIBUTES IN MATHS (SESS 2) 9 – 12.30 TRANSFORM	<b>Weds, 12</b> BUILDING POSITIVE ATTITUDES & ATTRIBUTES IN MATHS (FINAL SESSION) 9 – 12.30 TRANSFORM	<b>Thurs, 17</b> PROBLEM SOLVING STRATEGIES AT KS1 1 – 4PM VENUE: TBC	<b>Weds, 13</b> CREATIVE APPROACHES TO DEVELOPING MATHS FLUENCY IN SECONDARY CLASSROOMS 9 – 3.30 VENUE: TBC	<b>Mon, 18</b> DEVELOPING CONFIDENT PROBLEM SOLVING SKILLS KS3 & 4 3 – 5 VENUE: TBC	
<b>Fri, 28</b> TA MASTERY DERBY COHORT (SESS 3) 9-12 LANDAU FORTE	<b>Thurs, 11</b> PRE-TEACH INTERVENTION (SESS 2) 2 – 4.30 SNAPE WOOD PRIMARY SCHOOL	<b>Fri, 16</b> GETTING TO GRIPS WITH RATION & PROPORTION 9 – 3.30 VENUE: TBC		<b>Fri, 18</b> TA MASTERY (SESS 5) 9 – 12 TRENT VINEYARD	<b>Thurs, 28</b> KS2 TO KS3 TRANSITION LESSON STUDY 9 – 12.30 VENUE: TBC	<b>Fri, 22</b> TA MASTERY DERBY COHORT (FINAL SESSION) 9 – 1.30 LANDAU FORTE	
	<b>Fri, 12</b> BUILDING POSITIVE ATTITUDES & ATTRIBUTES IN MATHS 9 – 12.30 TRANSFORM	<b>Tues, 20</b> PRIMARY MATHS SPECIALIST TEACHER NOTTS COHORT (SESS 4) FULL DAY DIJANOGLY NORTHGATE		<b>Tues, 22</b> PRIMARY MATHS SPECIALIST TEACHER DERBY COHORT (SESS 5) FULL DAY LANDAU FORTE		<b>Tues, 26</b> KS2 TO KS3 TRANSITION LESSON STUDY 9 – 12.30 VENUE: TBC	
	<b>Weds, 17</b> CREATIVE APPROACHES TO DEVELOPING MATHS FLUENCY IN SECONDARY CLASSROOMS 9 – 3.30 VENUE: TBC	<b>Weds, 21</b> PRE-TEACH INTERVENTION (FINAL SESSION) 2 – 4.30 SNAPE WOOD		<b>Thurs, 24</b> PROBLEM SOLVING STRATEGIES AT KS2 1 – 4 VENUE: TBC		<b>Thurs, 28</b> LESSON STUDY: WHOLE CLASS STRATEGIES TO SUPPORT LEARNING AND BEHAVIOUR 9.30 – 3.30 VENUE: TBC	
	<b>Weds, 17</b> FACILITATOR SKILLS TRAINING (COHORT 2) FULL DAY TRANSFORM	<b>Fri, 23</b> TA MASTERY (SESS 4) 9 – 12 TRENT VINEYARD		<b>Fri, 25</b> TA MASTERY DERBY COHORT (SESS 5) 9 – 12 LANDAU FORTE			
	<b>Fri, 19</b> GETTING TO GRIPS WITH DIFFERENTIATION IN A MASTERY MATHS LESSON 9 – 12.30 VENUE: TBC	<b>Tues, 27</b> PRIMARY MATHS SPECIALIST TEACHER DERBY COHORT (SESS 4) FULL DAY LANDAU FORTE		<b>Weds, 30</b> TACKLING MISCONCEPTIONS, COLLABORATION, INDEPENDENT LEARNING & PROBLEM SOLVING 2.30 – 4.30 VENUE: TBC			
		<b>Fri, 30</b> TA MASTERY DERBY COHORT (SESS 4) 9 – 12 LANDAU FORTE		<b>Thurs, 31</b> STRATEGY FOR TEACHING FRACTIONS AT KS1 1 – 4 VENUE: TBC			

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# PRIMARY OFFERING

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## Maths Mastery in the Early Years – a focus on transition from F2 to Y1

Research tells us that developing a strong number sense early in life helps children gain a confidence with numbers and an appreciation of their relevance in the real world. Early number sense is a flexibility with numbers which prepares children for later learning in mathematics, helping them understand operations, perform mental calculations and solve complex problems.

This workshop will explore some key teaching strategies that promote early number sense within the four maths mastery themes in the Early Years: Comparison, Counting, Composition and Cardinality, including working with concrete materials and familiar ideas and composing and recomposing different arrangements and representations of number.

Focusing on the Early Learning Goal for number, practitioners will have the opportunity to consider age-related expectations at the end of F2 and the transition into Y1, and how the 'Characteristics of Effective Learning' (Playing and Exploring, Active Learning and Creating and Thinking Critically) can be deployed in both year groups.

This course will be facilitated by Lucy Savage and Caroline Vissani (Early Years Teaching and Learning Specialists with Nottingham City Local Authority) and Jane Gill (Primary Adviser for Nottingham City and Professional Development Accredited Lead for the National Centre for Excellence in the Teaching of Mathematics).



**Date:** 21 January 2019

**Time:** 1.00 – 4.00 pm

**Venue:** Nottingham Nursery School and Training Centre, Denman Street West,  
Nottingham NG7 3AB.

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



# Developing Number Fluency at Key Stage Two

Research findings highlight the need for children to be taught specific strategies for securing number fluency through a few key resources/images. Higher attainers in mathematics tend to use known facts or derived fact strategies whereas lower attainers rely on counting on approaches. If children can commit key facts to long term memory, then working memory is freed to deeper and more complex learning.

This course will therefore offer KS2 practitioners a structured and systematic teaching framework of the strategies for deriving additive root facts quickly and efficiently. There will also be an opportunity to explore successful, evidence-based strategies for helping children to memorise and apply their multiplicative facts.

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the primary phases, both at local and national level.

This course will take place on  
Thursday 20th September 2018  
from 1-4pm. To secure your place  
or for further information  
please email: Kate

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)





# Developing Number Fluency at Key Stage One

According to the National Curriculum, pupils in Y1 should 'memorise and reason with number bonds to 10 and 20 in several forms (for example,  $9 + 7 = 16$ ;  $16 - 7 = 9$ ;  $7 = 16 - 9$ )'. As many children rely on counting on approaches for these additive root facts, which research tells us is associated with low attainment, this course will offer practical ideas for ensuring children develop strategies for deriving facts more efficiently.

A structured and systematic teaching framework will be offered as well as some key resources with proven success for helping children to acquire, retain and apply their number facts.

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the primary phases, both at local and national level.

This course will take place on  
Thursday 27th September 2018  
from 1-4pm. To secure your place  
or for further information  
please email: Kate

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



Nottingham

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## Problem-solving strategies at Key Stage One

This workshop will offer an opportunity for practitioners to explore the problem-solving strategies KS1 children can use to solve mathematical puzzles and problems independently.

The course will focus on some of the key heuristics that equip young children to become successful problem solvers: 'draw a model', 'guess-check-improve', 'act it out' and 'make a systematic list'.

Teaching children heuristics develops confidence and open-mindedness: the problem solver will learn to appreciate that there is more than one way to solve a problem.

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the primary phases, both at local and national level.

This course will take place on  
Thursday 17th January 2019 from  
1-4pm. To secure your place or  
for further information  
please email: Kate

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



**Nottingham**  
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## Problem-solving strategies at Key Stage Two

The aim of this workshop is to support practitioners to empower children to be independent problem solvers. It will offer an opportunity to explore strategies for equipping KS2 children to think flexibly in order to make sense of complex problems.

It is extensively recognised that heuristics should and can be taught, as skill-based lessons, and that they can help greatly to improve a child's problem solving performance. Eleven heuristics for solving problems will be explored with a focus on the key ones for developing logical thinkers: representing a problem and making a calculated guess.

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the primary phases, both at local and national level.

This course will take place on  
Thursday 24th January 2019 from  
1-4pm. To secure your place or  
for further information  
please email: Kate

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)





## Strategies for Teaching Fractions at Key Stage One

This workshop will support practitioners with ideas and resources in order to prevent the narrow view of fractions and the misconceptions that children can develop from a young age. The focus on subject knowledge will cover the multiple meanings fractions can have in order to ensure KS1 children develop a deep conceptual understanding.

Strategies for supporting children to solve division and measurement problems (involving fractions in the real world) will also be explored. The aim is to empower children to notice relationships and make connections.

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the primary phases, both at local and national level.

This course will take place on  
Thursday 31st January 2019 from  
1-4pm. To secure your place or for  
further information  
please email: Kate

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



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# Strategies for Teaching Fractions at Key Stage Two

Fractions has always been considered a difficult-to-teach area of the mathematics curriculum with the potential for children to develop misconceptions from an early age. This course will address this issue by providing an opportunity for practitioners to enhance their subject knowledge for supporting KS2 children's mastery of fractions in all their forms: parts of a whole, operators, numbers and quotients. Manipulatives and representations (including Cuisenaire rods, the bar model and arrays) with a proven success rate for securing a deep conceptual understanding of fractions will be explored.

There will also be a focus on strategies for ensuring children develop skills in proportional reasoning and in making rich connections with other related areas of the KS2 mathematics curriculum (including division and measurement).

This course will be facilitated by Jane Gill who is the Primary Adviser for Nottingham City Local Authority and a Professional Development Accredited Lead with the National Centre for Excellence in the Teaching of Mathematics. She is an experienced provider of training across the

**This course will take place on  
Thursday 7th February 2019 from  
1-4pm. To secure your place or  
for further information  
please email: Kate**

**[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)**



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## Getting to grips with *Ratio and Proportion*

Multiplicative and proportional reasoning provide the foundation for so many aspects of the Primary and Secondary Mathematics curriculum, including conversions, multiplication and division, fractions, percentages, time, speed, scale, probability and rates.



Unfortunately, many children find working with ratios and proportional relationships challenging and, as a result, struggle across the curriculum.



This full-day workshop will explore innovative strategies and techniques for improving children's understanding of proportional relationships. We will look at both visual and numerical methods for representing and describing proportional relationships that work across a range of curriculum topics, and investigate key mistakes and misconceptions children make.

This workshop will be particularly useful for upper KS2 Primary teachers. However, the methods, techniques and representations that we will explore will also be relevant for several topics and problems encountered by KS1, lower KS2, and KS3 teachers.



The workshop will be facilitated by Dr. Marc North, an experienced Maths Lead with experience in Primary, Secondary and Higher Mathematics education.

Date: 16 November 2018

Time: 9.00 am – 3.30 pm

Venue: TBC

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



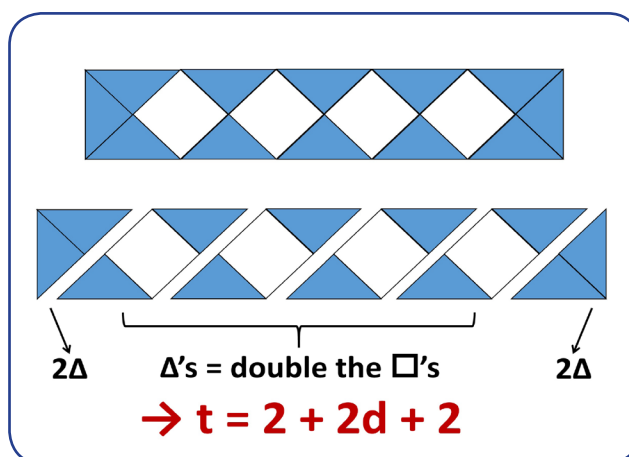




## Getting to grips with Algebra in Primary School

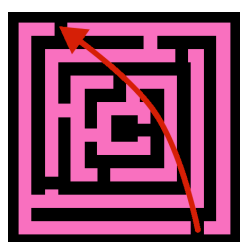
Algebra is a crucial component of the Secondary School and Higher Education Mathematics curricular. Primary teachers have an integral role to play in laying the foundations for a deep understanding of why Algebra is important and the links between arithmetic and algebraic notation.

This half-day workshop will explore innovative and exciting strategies and resources for teaching Algebra in Year 5 and 6 classrooms. Participants will work with a variety of pattern problems to investigate techniques for extending and generalizing patterns, and for making connections between the structures of the patterns and the structures of the algebraic expressions that describe those patterns.



A further key aim of this workshop is to establish Algebra as a form of 'generalised arithmetic' such that the rules that apply in arithmetic also apply in Algebra. This approach will help children better manage working with variables, expressions and equations.

The workshop will be facilitated by Danielle Wood-Wallace, a dynamic Year 6 teacher at Rosslyn Park Primary and Nursery School in Nottingham. Danielle is an experienced researcher and has published extensively in both academic and professional journals. She is also an accredited Maths Professional Development Lead (NCETM) and a Growth / Mathematical Mindset enthusiast.



Date: 11 January 2019  
Time: 9.00 am – 12.30 pm  
Venue: TBC

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

## Getting to Grips with *the Maths No Problem Scheme*

With the introduction of the Mastery curriculum, many schools turned to the Maths No Problem scheme and textbooks to support them in developing Maths within their schools. Whether you are brand new to the Maths No Problem textbooks and would like some help to understand how to use them effectively, or you have been using them in school for a while and would like to get more out of them, or even if you would just like a refresher having had previous training, then this session could be for you!

During this half-day session, we will look at:

- The different features of Maths No Problem
- What the structure could look like in your school
- Models and methods used
- MNP terminology
- Understanding the website

**Please note:** To access this course fully you will need to bring either a laptop/tablet.



The sessions will be facilitated by Jacqui Trowsdale, an experienced Maths Lead and Year 5 teacher at Allenton Primary School in Derby. Jacqui is a Primary Maths SLE, is accredited by the NCETM in Professional Development, and has co-authored a book: 'Evidence-Based Teaching in Primary Education'.

### Target audience:

- Primary teachers interested in introducing the Maths No Problem scheme and textbooks in their school or using them more effectively.
- Secondary teachers interested in learning about the ways in which children work in a Mastery curriculum.

Date	Time	Focus	Venue
3 October 2018	9.00 am – 12.30 pm	Understanding how to use the MNP approach and textbooks effectively	TBC

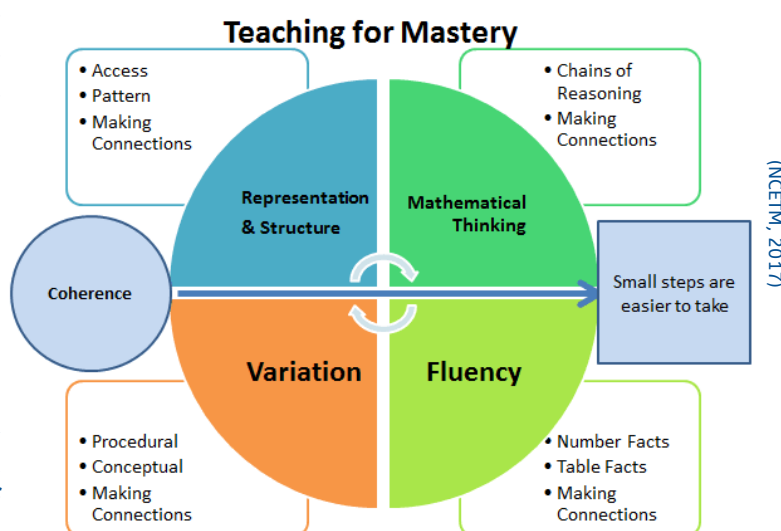
To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



## Getting to Grips with *Mastery Lesson Design*

The introduction of a Mastery curriculum and Mastery pedagogy in both Primary and Secondary schools has ushered in specific expectations for lesson sequencing, lesson structure, and classroom organisation.

This series of workshops will explore the characteristics of effective Mastery lessons. Participants will have the opportunity to work collaboratively to plan a series of shared lessons and activities that incorporate these characteristics. Participants will trial these lessons in their classrooms between workshop sessions and report-back on their learning and experiences.



The workshop will be facilitated by Phil Herd, an experienced Maths Lead and teacher at Rosslyn Park Primary and Nursery School in Nottingham. Phil is a Mastery specialist, a Primary Mathematics Professional Development Lead, and leads several East Midlands West Maths Hub workgroups and programmes. Phil has a Masters in Education focusing on the Mastery approach.

### Target audience:

Primary and Secondary teachers interested in exploring a Mastery lesson structure and curriculum approach.

### Session details:

Session	Date (2018)	Timings	Focus	Venue
1	8 October	9 am – 3.30 pm	Principles of effective Mastery lesson design and pedagogy Developing shared resources	Transform Trust Head Offices
2	3 December	1.30 – 3.30 pm	Sharing experiences and learning	

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

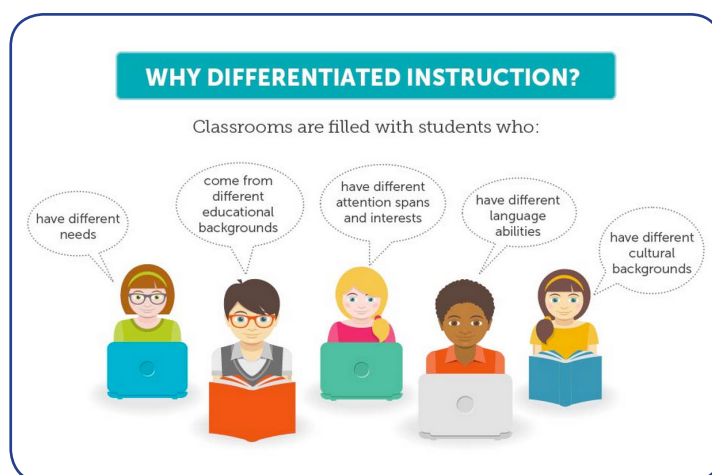


## Getting to Grips with *Differentiation in a Mastery Maths Lesson*

The introduction of a Mastery curriculum and Mastery pedagogy in both Primary and Secondary schools has ushered in specific expectations for differentiation. The message that all children are working at roughly the same pace has led to some confusion on which approaches adequately support and challenge children across the attainment spectrum.

This half-day workshop will explore the characteristics of effective differentiation for schools and teachers who adopt a Mastery approach.

Participants will have the opportunity to work collaboratively to explore the idea of differentiation at the level of task rather than child. Some example approaches will be provided as a starting point for discussion but participants will bring along their own examples of how they differentiate to share and develop best practice amongst the group.



The workshop will be facilitated by Phil Herd, an experienced Maths Lead and teacher at Rosslyn Park Primary and Nursery School in Nottingham. Phil is a Mastery specialist, a Primary Mathematics Professional Development Lead, and leads several East Midlands West Maths Hub workgroups and programmes. Phil has a Masters in Education focusing on the Mastery approach.

### Target audience:

Primary and KS3 teachers interested in but unsure of differentiation in a mastery approach.

### Session details:

Date	Time	Focus	Venue
19 October 2018	9 am – 12.30 pm	Exploring the idea of differentiation at the level of task rather than child. Using CTG tasks to showcase a 'menu offering' of tasks.	TBC

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



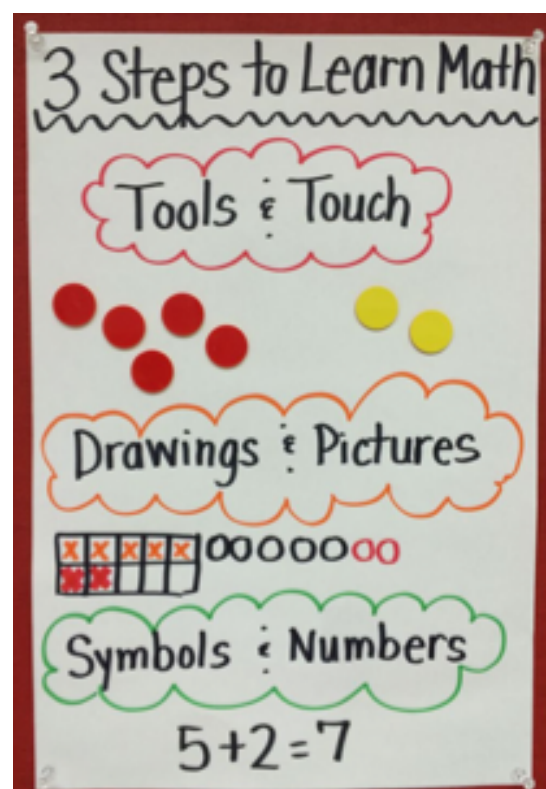


## Getting to Grips with *using Multiple Representations (CPA) effectively in Mastery lessons*

As the National Curriculum has evolved and Maths Mastery has been introduced within the UK, a greater emphasis has been placed on the understanding and use of a variety of models, constructs and representations. This half-day workshop aims to provide the opportunity to work through a variety of rich problems, looking at how they could be represented in a variety of ways. Making strong links between these representations and formalised methods as well as understanding the progression between them will be key elements of the training.

There are separate sessions for KS1 and KS2 teachers. Although the ideas in each session will be similar, the sessions have been split to allow for a bespoke focus on age-appropriate representations, objectives and problems.

The sessions will be facilitated by Jacqui Trowsdale, an experienced lead at Allenton Primary School. Jacqui is a Primary Maths SLE, is accredited by the NCETM in Professional Development, and has also co-authored a book: 'Evidence-Based Teaching in Primary Education'.



### Target audience:

- Primary teachers interested in using multiple representations (including manipulatives) more effectively to develop deep conceptual understanding of concepts.
- KS3 teachers wanting to know more about the types of representations students are exposed to in Primary school.

### Session details:

Key Stage Focus	Date	Time	Focus	Venue
Key Stage 1	7 November 2018	9.30 am – 12.00 pm	Using multiple representations effectively	TBC
Key Stage 2		1.00 – 3.30pm		

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

## Getting to Grips with *Developing Effective Mastery Maths Assessments*

The removal of levels at the time the Mathematics curriculum was updated in 2014 left schools trying to find new ways of assessing children's progress in Mathematics. At the same time, a new approach to teaching Mathematics, a 'Mastery' approach was introduced. However, many teachers are struggling to find assessments that match this Mastery approach and that align to their curriculum schedules.

This full-day workshop will explore the characteristics of effective mastery assessments and will give participants the opportunity to work collaboratively to develop effective assessment tasks and strategies suited to their own students and contexts. An aim of the workshop is for teachers to leave with a bank of assessment items spanning all year groups to trial and share in school.



The workshop will be facilitated by Phil Herd, an experienced Maths Lead and teacher at Rosslyn Park Primary and Nursery School in Nottingham. Phil is a Mastery specialist, a Primary Mathematics Professional Development Lead, and leads several East Midlands West Maths Hub workgroups and programmes. Phil has a Masters in Education focusing on the Mastery approach.

### Target audience:

Primary and KS3 teachers interested in developing bespoke Mastery assessment tasks to better suit their specific contexts and students.

### Session details:

Date	Time	Focus	Venue
9 November 2018	9 am – 3.30 pm	Collaboratively develop Mastery assessment tasks / tests	TBC

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

## Scaffolding Learning and Modelling Practice Effectively in Mathematics

Knowing how to make abstract and complex mathematical concepts accessible is key to helping all children develop a deep understanding of the mathematics curriculum. This workshop will explore strategies for scaffolding mathematical concepts and ways of modelling mathematical practices to promote deep conceptual understanding. Participants will have the opportunity to see first-hand how experienced teachers model and scaffold concepts, and to practice their own skills by developing resources and sharing these with the group.

The workshop comprises into two parts:

- Morning session - 'open-classroom' visits to view effective modelling and scaffolding in practice in Mastery Maths lessons
- Afternoon session – discussion and debrief of observations from the morning session, plus the opportunity to work collaboratively to develop resources that scaffold learning concepts effectively



The workshop will be facilitated by Rachel Meli and Jacqui Trowsdale. Rachel is an experienced Year 6 teacher and Associate Headteacher for the Transform Trust. Jacqui is an experienced Year 3 teacher, Maths Lead at Allenton Primary School in Derby, Maths SLE, and accredited NCETM Maths PD Lead.

### Target audience

Primary teachers who want to scaffold and model mathematical concepts effectively

**Date:** 27 February 2019

**Time:** 9 am – 3.30 pm

**Venue:** Open Classrooms – Allenton Community Primary School, Derby  
Afternoon session – Pear Tree Community Junior School, Derby

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

## Specialist Maths Training for Teaching Assistants

This series of workshops will explore key teaching strategies, resources and techniques to support mathematical learning across all key stages. Session topics will focus on key content strands from the curriculum.

Teaching Assistants who attend this programme will enhance their knowledge of both maths concepts and effective teaching strategies to support children's learning.

### The training will explore:

- Session 1: Key principles of Mastery
- Session 2: Addition and Subtraction
- Session 3: Multiplication and Division
- Session 4: Fractions, decimals and percentages
- Session 5: Ratio and proportion (Including conversions)
- Session 6: Statistics + Celebration



Alongside a focus on Maths concepts, all sessions will also explore:

- How different representations can be used to enhance children's understanding
- Strategies for catering for different learning styles
- The use of rich tasks
- Strategies to enable effective differentiation.

Delivered by:

- Trish Wilson, Lead TA and Support Staff Associate for the Transform Trust and Teaching School Alliance
- Lisa Vann, Teaching and Learning Lead for the Transform Trust
- Marc North, Maths Lead Associate for the Transform Trust

Session	Date	Timings	Venue
Session 1	5 June 2018	9am - 12pm	TBC
Session 2	29 June 2018	9am - 12pm	
Session 3	21 Sept 2018	9am - 12pm	
Session 4	23 Nov 2018	9am - 12pm	
Session 5	18 Jan 2019	9am - 12pm	
Session 6	15 March 2019	9am - 1.30pm	



## Building Positive Attitudes and Attributes in Mathematics

This series of three half-day workshops will explore specific strategies for promoting positive attitudes and attributes towards Mathematics learning for Primary School children. Drawing on principles and findings from the recent EEF Metacognition report, the workshops will highlight both research-informed and tried-and-tested practical ideas, activities and strategies for fostering motivation, perseverance, resilience and positivity in Mathematics lessons. The workshops will cover the following broad concepts:

- Attributes for metacognition
- Developing metacognition muscles
- Teaching and modelling metacognition
- Metacognitive talk

The workshops will be facilitated by Jon Fordham, an experienced head teacher at Allenton Primary School in Derby. Jon has successfully developed and spearheaded a host of whole-school metacognition practices at Allenton, all of which have had a significant impact on teachers and children's aspirations, expectations, experiences and outcomes in Mathematics lessons.

After each session, participants will trial specific metacognition strategies in their classrooms and feedback about progress and learning.



### Session dates and times:

Session	Date	Timings	Focus
Session 1	12 October 2018	9.00 am – 12.30 pm	Introduction to 'metacognition' Sharing and audit tool
Session 2	14 November 2018		Expanding our repertoire of strategies
Session 3	12 December 2018		Feedback, learning and next steps

Venue: TBC

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

## Open School - Bluebell Hill Primary School

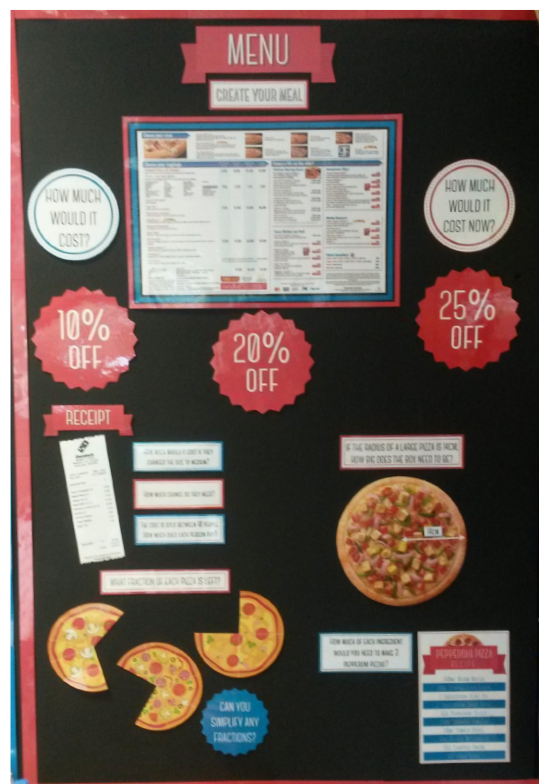
### Using Learning Environment to Support Children's Mathematical Learning

Welcome to our first ever 'Open School'!

When used effectively, learning environment serves a dual purpose in a Mathematics classroom.

Firstly, to motivate and inspire children about their learning and to expand their understanding of how mathematics links to the world beyond school.

Secondly, as a tool to directly support and scaffold children's learning and understanding.



Bluebell Hill Primary School pride themselves on their deliberate and effective use of learning environment to achieve these two goals, and they are excited to be able to share this learning.

The workshop will be led by Sophie Gray, the Maths Lead at Bluebell Hill Primary, and will include the following:

- A tour of the school to see the learning environment in action.
- A post-tour discussion and workshop on learning environment non-negotiables, on how to use learning environment effectively, and opportunity for networking and idea-sharing.

Date	Time	Venue
19 November 2018	9 am – 12.30 pm	Bluebell Hill Primary School, Gordon Road, St. Ann's, Nottingham, NG3 2LE

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

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# SECONDARY OFFERING

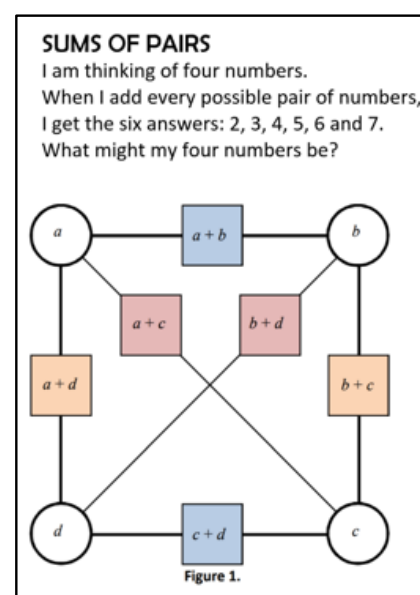
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## Creative Approaches to Developing Mathematics Fluency in Secondary Classrooms

This series of three full-day workshops will showcase ways of helping students to develop fluency in important mathematical processes without subjecting them to repetitive, tedious exercises. Many mathematics teachers use exercises reluctantly, because they know that students need confident facility with important techniques, but they don't want to bore them with 'drill and kill' exercises.

My recent research suggests that rich, problem-solving tasks (which I call 'mathematical etudes' – see [www.mathematicaletudes.com](http://www.mathematicaletudes.com)), if well designed, can be just as effective as exercises for developing fluency with procedures, while at the same time giving students the opportunity to think creatively and build their conceptual understanding. We will try some etudes ourselves and discuss how they can be used effectively in the classroom. We will also consider some design principles for creating mathematical etudes.



### Session details:

Session	Date	Time	Focus
1	17 October 2018	9 am – 3.00 pm	Etudes and exercises compared <ul style="list-style-type: none"> <li>What is a mathematical etude and how does it differ from a set of traditional exercises.</li> <li>How can etudes be used effectively in the classroom?</li> </ul>
2	10 December 2018		Fluency in the mathematics classroom <ul style="list-style-type: none"> <li>Share experiences from trying out etudes with your classes.</li> <li>Draw together principles for designing etudes that are naturally self-differentiating and that are low-entry-high-ceiling.</li> </ul>
3	13 February 2019		A departmental approach to fluency <ul style="list-style-type: none"> <li>Embedding etudes into a department's scheme of learning as a consistent approach across classes and year groups.</li> <li>Designing etudes for all ages from Year 7 to sixth form.</li> <li>Balancing etudes with other task genres.</li> </ul>

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)





## Developing Confident Problem-Solving and Skills at Key Stages 3 and 4

Following the introduction of the 2014 National Curriculum for Mathematics, schools have been challenged to adopt pedagogical approaches which enable pupils to develop confidence in their problem-solving and reasoning skills. Both elements require pupils to gain strong conceptual understanding of mathematics as well as confident fluency in using and applying core skills and knowledge. Recent GCSE examinations confirm that convincing reasoning and problem-solving skills form clear pre-requisites for success within the assessment structures for secondary-aged children.



This series of two full-day workshops has the following aims:

- To enable participants to build on, share and extend current best practice within the fields of problem-solving and reasoning.
- To extend teachers' abilities to strengthen pupils' problem-solving and reasoning skills as a vehicle for enhancing pupil progress in mathematics.
- To provide opportunities for participants to develop, trial, evaluate and share ideas that exemplify effective practice.
- To generate opportunities for participants to set up mutually supportive networks for ongoing work on problem-solving and reasoning within the field of learning and teaching of mathematics.

### Session 1 - Exploring the nature of effective problem-solving and reasoning

Through use of video footage, active engagement with mathematical activities and informed discussion, this session will aim to enable participants to explore and understand the key pre-requisites and dispositions for effective problem-solving and reasoning. It will provide opportunities for participants to share experiences as well as to enhance their thinking on how pupils' skills and confidence in these key areas might be promoted in the classroom.

### Session 2 - How is it going so far? Where to next?

In this session, participants will share and evaluate their experiences of trialling strategies and approaches developed in Session 1. We shall also re-visit and critique the strategies discussed and developed in Session 1. The teaching school will enable participants to share resources and promote cross-school networking as a mutual support strategy.

These workshops will be facilitated by Dave Benson from the University of Derby. Dave is an experienced Secondary practitioner and the Mathematics Subject Leader on the University of Derby's Initial Teacher Education Programme.

### Session details:

Session	Date	Timings	Venue
Session 1	4 February 2019	3.00 - 5.00pm	TBC
Session 2	18 March 2019		

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



## Tackling misconceptions, collaboration, independent learning and problem solving in Maths

This programme will equip teachers with a practical, research-based, pedagogical toolkit to support four key aspects of student learning in Mathematics – collaborative working, metacognition skills, connecting representations and contents, and effective problem solving. Key misconceptions that students encounter as they navigate different parts of the Secondary School Maths curriculum will inform these four aspects.

The programme involves four half-day sessions. At each session, participants will explore strategies for the four aspects and will have an opportunity between sessions to trial strategies in their classrooms. Every session will include an option for participants to share their classroom experiences.

<p><b>Session 1: Developing collaborative skills</b></p> <ul style="list-style-type: none"><li>• Why collaboration fails and why it is worth fostering.</li><li>• Factors that contribute to effective collaboration.</li><li>• Practical tools to support pupils working collaboratively.</li></ul>	<p><b>Session 2: Developing metacognitive skills</b></p> <ul style="list-style-type: none"><li>• What is metacognition and what are its benefits.</li><li>• Why pupils find it so difficult to incorporate metacognitive strategies when solving problems.</li><li>• Explicit strategies to foster metacognitive skills.</li></ul>
<p><b>Session 3: Developing a connected understanding</b></p> <ul style="list-style-type: none"><li>• Using pre-designed sample solutions to support understanding of a concept's structure and relationships between variables.</li><li>• Characteristics of pre-designed solutions that enhance learning.</li><li>• The benefits of comparing the relative validity of differing solutions.</li></ul>	<p><b>Session 4: Developing problem solving skills</b></p> <ul style="list-style-type: none"><li>• 'Getting Started' – strategies to help students interpret problems.</li><li>• 'The method' – strategies to identify efficient and appropriate methods.</li><li>• 'Written communication' – strategies to communicate methods and solutions effectively.</li></ul>

Facilitated by **Sheila Evans** from the Centre for Research in Mathematics Education at the University of Nottingham. Sheila is an experienced Secondary Mathematics teacher, university lecturer and researcher. She has authored a textbook for pupils resitting GCSE mathematics.

**Dates:** Session 1 – 4 October 2018  
Session 3 – 30 January 2019

Session 2 – 6 December 2018  
Session 4 – 7 March 2019

**Timings:** 2.30 – 4.30 pm for all sessions

**Venue:** TBC

**To book please email:** [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

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# PRIMARY & SECONDARY OFFERING

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## Pre-teach intervention workgroup

This programme is for Primary and Secondary Mathematics teachers who are able to commit to running a pre-teach intervention model.



This action research workgroup will research, trial and share experiences of running a pre-teaching intervention model in Primary and Secondary Mathematics classrooms.

We hope to show that this model of intervention has the potential to help children who usually struggle in mathematics to become more confident during lessons and to participate more in classroom activities and discussions.

Delivered by Dr. Marc North - Experienced facilitator in Primary and Secondary Mathematics and Higher Education. The training will explore:

- Session 1: Researching a pre-teach intervention model and planning to deliver this model in the new academic year
- Session 2: The journey so far? Sharing experiences
- Session 3: Sharing learning, evaluating impact and developing case studies

Session	Date	Timings
Session 1	28 June 2018	9.30am - 3.30pm
Session 2	11 Oct 2018	2pm - 4.30pm
Session 3	21 Nov 2018	2pm - 4.30pm

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)





## KS2 to KS3 Transition Lesson Study

The DfE publication KS3: The Wasted Years (2015) highlighted as a key finding that many children's results and progress drop in Mathematics as they transition from Primary to Secondary school. A second key finding is that "too many secondary schools did not work effectively with partner primary schools to understand pupils' prior learning and ensure that they built on this during Key Stage 3" (p. 5).

Delivered by Dr. Marc North - experienced facilitator in Primary, Secondary Mathematics and higher education, this lesson study group will unpick why children's results and progress dips as the transition from KS2 and 3. It will also provide Primary and Secondary schools the unique opportunity to work collaboratively to strategise about how best to support and ensure continuity in children's learning as they move from Primary to Secondary school. We will draw on various sources to identify principles of effective Mathematics practice (e.g. EEF Mathematics Guidance Report) and will explore what these might look like in different settings. We will also explore the disjuncture between pedagogic practices in Primary and Secondary classrooms, and how this might be contributing to children having to 're-learn how to learn' Mathematics as they transition from KS2 to 3.



In addition, two 'Open Classroom' experiences will provide all teachers with an opportunity to experience first-hand how Mathematics is taught in different phases.

### Target audience:

Primary and Secondary Mathematics teachers who are interested in working collaboratively to identify strategies to support transition.

### Session details:

Session	Date	Time	Focus	Venue
Session 1	10 January 2019	9.00 am – 12.30 pm	Exploring principles of effective Mathematics practice	TBC
Session 2	28 February 2019	9.00 am – 12.30 pm	Primary Open Classroom, followed by lesson debrief and discussion	
Session 3	26 March 2019	9.00 am – 12.30 pm	Secondary Open Classroom, followed by lesson debrief and discussion	

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



## Lesson Study: Whole-Class Strategies to Support Learning and Behaviour Difficulties in Inclusive Maths Classrooms

This Lesson Study will explore and trial elements of whole class pedagogy aimed at teachers who teach inclusive classrooms that may include children with SEN, children with learning difficulties, and/or children with challenges in behavior and engagement. The study will explore and trial strategies that teachers can engage with the whole class to ensure that all children are kept on task and are able to transition successfully between tasks. By working with both Primary and Secondary schools, this study will also aim to support the transition of learners from KS2 to KS3.



An initial workshop will introduce elements of structured teaching and positive behaviour support that have been proven to work for all students, regardless of attainment level and confidence. Participating schools will then generate shared expectations and commit to elements of practice that they will all embed in their Maths classrooms. On-going support will be provided by the delivery team to ensure that each school is able to embed the agreed practices in their own setting.

The lesson study will be facilitated by Dr. Debra Costley and Mark Simmons from the School of Education at the University of Nottingham. Debra Costley has over thirty years of experience in education, particularly special education, in the UK, Australia and the USA. She has worked in special schools, further and higher education in Australia and the UK and most recently was National Director, Aspect Practice for Autism Spectrum Australia (Aspect). Mark has experience in Secondary and Higher Maths Education and has recently concluded a successful Lesson Study for the Nottingham City Education Improvement Board.

### Target audience:

Primary and Secondary teachers interested in developing strategies for managing inclusive classrooms

### Session details:

Session	Date (Venue TBC)	Time	Focus
1	6 November 2018	9.30 am – 3.30 pm	Initial sharing and discussion of research on whole class strategies to support all learners and positive behaviour support.
2	11 February 2019	9.00 am – 12.30 pm	Follow-up workshops to share outcomes of lesson study and to review practice
3	28 March 2019	9.00 am – 12.30 pm	

To book email: [katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)

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## Open Classroom Programme

Showcasing and modelling best practice to  
improve the teaching and learning of maths

“ Seeing Mastery maths in action was  
incredibly valuable! It was great to have  
the opportunity to discuss this approach  
afterwards with the class teacher and  
facilitator. I am now able to see how this  
could work in my school and I’m looking  
forward to getting started. ”

-Open Classroom 2017



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## Strategic School Improvement Project 2: Maths

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As part of our strategy to showcase effective Mathematics teaching and learning, we are looking for strong practitioners to share their work by opening their classrooms to colleagues.

The Open Classroom programme wants to identify, nurture and encourage good and outstanding practitioners, in a range of year group settings and subject specialisms to demonstrate what makes an effective lesson and how it looks in practice.

Sessions will include pre and post lesson discussion and analysis of practice with experienced teaching and learning leads.

This is a unique opportunity for host teachers to further grow and develop professionally and explore the possibilities of leadership in their areas of expertise.

The benefits of hosting an open classroom:

- ◆ Provide examples of quality maths teaching and learning to support the Maths SSIF Project
- ◆ Preparation for Ofsted
- ◆ Building confidence and leadership skills
- ◆ Immediate reflection on teaching
- ◆ Friendly and insightful support process

The benefits for those visiting open classrooms:

- ◆ Opportunity to replicate models of best practice in your own setting as seen and discussed at the session
- ◆ A broad range of sample lessons to cover all year groups, abilities and subject specialisms
- ◆ Active reflection is built into a structured framework for observation
- ◆ Development of strong observation skills

**Cost to attend open classrooms: Funded by SSIF 2: Maths.**

Places will be limited to 6 delegates per session.

For further information or to nominate a host teacher/class please contact:

[Katie.felstead@transformtrust.co.uk](mailto:Katie.felstead@transformtrust.co.uk)

To book a place for an open classroom observation please email:

[Katie.felstead@transformtrust.co.uk](mailto:Katie.felstead@transformtrust.co.uk)





## Maths Facilitator Skills Training Cohort 2

This workshop develops skills in the facilitation of Maths professional development (PD) for teachers.



This sponsored workshop is aimed at Maths and other leaders who regularly facilitate Maths PD in school.

The workshop will draw on the DfE Standards for Professional Development to explore Maths-specific professional development principles and practices alongside a more general focus on facilitation skills.

### The training will explore:

- Research-informed principles of effective maths-specific PD
- How facilitation differs from teaching, coaching or mentoring
- The mindset of a facilitator and building confidence to facilitate
- Ideas to increase discussion, interaction and involvement
- Tools and models to help your planning and group engagement
- Opportunity to practice your facilitation and gain valuable feedback from peers
- Ideas and options to deal with different types of delegates

Delivered by Dr. Marc North - Experienced Maths Lead Associate in key stages 1-5 as well as in higher education and Fiona Moore - facilitator of 20 years' experience and developer of the Transform Coaching Programme.

**Session date:** Wednesday 17th October 2018

**Timings:** 9:30am - 3pm

**Venue:** TBC



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To book on any programmes contact Katie Felstead [ Maths SSIF Programme Manager ]:

[katie.felstead@transformtrust.co.uk](mailto:katie.felstead@transformtrust.co.uk)



For more information about the content of the programmes, contact Marc North [ Maths SSIf Project Lead ]:

[marc.north@transformtrust.co.uk](mailto:marc.north@transformtrust.co.uk)



Electronic copies of flyers for each programme are available for download here: <https://goo.gl/8P4fLH>

## NOTES

[illegible]



## Transform Teaching School Alliance

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