London Schools Excellence Fund

Self-Evaluation Toolkit

Final report

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Evaluation Final Report

Project Oracle: Level 2
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Project Name: Raising achievement in mathematics through the development of subject specialist teachers.
Lead Delivery Organisation: Education Teaching Alliance Lewisham
London Schools Excellence Fund Reference: LSEFR1115
Author of the Self-Evaluation: Jacqui Waine
Total LSEF grant funding for project: £180550
Total Lifetime cost of the project (inc. match funding): £218545
Actual Project Start Date: January 2014
Actual Project End Date: July 2015

1. Executive Summary

This project started in January 2014 with a six-month pilot study involving 8 maths leaders from 7 Lewisham primary schools (cohort 1). The second year ran from September 2015-July 2016 with a further 12 maths leaders from 12 primary schools (cohort 2). Each cohort 2 teacher attended a workshop each half term with follow up tasks for themselves or their schools. Four teachers from cohort 1 attended a series of sessions focusing on coaching with the aim of them supporting cohort 2. The project was led by Jacqui Waine from the Education Teaching Alliance Lewisham.

The aims of this project were to raise achievement in mathematics within primary school by:

- Developing subject knowledge of maths leaders
- Supporting leaders to pinpoint the specifics of good maths teaching and learning
- Enabling the leaders to disseminate these skills and knowledge effectively within their school setting
- Creating a bank of resources to allow wider dissemination
- Using video capture technology to support and enhance the above.

Key findings of this project were:

- Subject knowledge of maths leaders has improved as is shown by the outcomes from subject knowledge audits. Qualitative feedback from questionnaires also showed improved outcomes regarding subject knowledge and efficacy.
- Leaders were able to pinpoint specifics of good maths teaching and learning by the use of impact evaluation frameworks. These frameworks allowed them to focus on one particular area of maths and consider how to best support their target children.
- During the project, teachers and head teachers gave positive feedback about the impact of the project through questionnaire responses on maths subject knowledge and leadership skills of the lead teacher; on teaching and learning across the school and on pupil outcomes in maths.
- Skills and knowledge were disseminated within the school setting with 100% of cohort 2 participants being able to support other members of staff during the project compared to 0% in the previous year for cohort 1.
- A resource bank has been created for other schools and teachers to use.
- The continuous stream of professional development allowed participants to be supported, to support each other and to feed back to the group.
- Time to allow colleagues to meet more often across the two cohort may have been of benefit, this was hinted towards the end as shown in the mobilisation of the knowledge between the participants in their own cohorts.
- It was interesting that very quickly, a repertoire of information, besides that of level descriptors, could be used to inform teaching and learning within school. Whilst schools are confident with qualitative data, the measuring of qualitative data was very insightful and something that can be replicated easily within general school practice.

2. Project Description

''The 'subject knowledge' of teachers of mathematics, especially but not only those in primary schools, has been a high-profile issue in the UK and beyond for more than a decade.'' Joubert, M. (Ed.) Proceedings of the British Society for Research into Learning Mathematics 28(2) June 2008

The Raising Achievement in Maths programme looked to raise standards in Numeracy by developing subject knowledge and securing teaching excellence through evaluative reflection.

Using a peer led school-to school approach across 13 Lewisham primary schools allowed the project to consider local need, build in sustainability and subsequently to disseminate findings and expertise on a wider scale. All schools in Lewisham were invited to take part.

We asked teachers where possible, to specifically concentrate on those children not making expected progress (excluding SEN). Throughout Lewisham the gap between FSM and non-FSM children continues to apply so teachers were reminded to consider these children if this was pertinent to their classroom context.

The project ran as a pilot for two terms; during this pilot, six maths leaders (cohort 1) attended a series of six workshops. The pilot allowed a deeper understanding of the needs of teachers and schools to emerge so that in the second year we were able to increase numbers with an additional 12 leaders. Decisions around impact evidence were made based on experiences from the pilot project.

From September 2014 to July 2015 cohort 2 maths leaders attended a series of workshops supporting pedagogic mathematical subject knowledge. The intention of the rolling programme of workshops was to enable teachers to take back to their schools what they had learned and put this learning into practice within their school setting; this meant that there was continual feedback to the project lead as cohort 2 teachers brought back ideas and lessons learnt to subsequent workshops.

Leaders would specifically use knowledge from the sessions within their classroom practice, evaluating the impact of their teaching through the use of impact evaluation frameworks. The rationale for using these frameworks **(Appendix 1)** was to enable teachers to pinpoint and evaluate successful strategies and to then disseminate this knowledge to other teachers.

In order to ensure that the project had the capacity for larger impact, each participating school was contracted to support their participating leaders to have a wider role, with the aim to have a greater impact within the school. Schools had to give each leader time each term for leading CPD using resources from the workshops. It was also necessary for each school to make the project part of their school development plan (**Appendix 2)** so that this became a whole school focus with the aim of having a far-reaching effect on the whole school rather than just on specific teachers.

Alongside these main session, cohort 1 teachers from the pilot were invited to attend four sessions over the year developing their coaching skills with the aim of supporting cohort 2 teachers in areas such as data collection and writing the impact frameworks (the pilot had shown these to be areas of concern for participants).

The Iris Connect and Star lesson video system was used in all schools to complement the impact evaluation and analysis of teaching and learning with the aim of supporting a deepened understanding of the impact of high level Maths subject knowledge upon attainment and progress.

The Head of the Education Teaching Alliance Lewisham (ETAL) Jacqui Waine was responsible for the delivery of the project: This included the initial writing of the theory and evaluation framework, the delivery of sessions as well as the project management and budgeting. Glenys Ingham, Executive Head in Lewisham supported early strategic planning; Lewisham Local Authority supported the project; The Institute of Education (IOE) supported with the methodology of the project and data analysis, Sarah Seleznyov from the IOE planned and led the coaching sessions for cohort 2 teachers.

The project will roll out across two other schools as the project lead has taken up a new post and will use a streamlined version to support a school in special measures in the teaching and leading of maths in order to raise attainment and achievement.
ETAL is a strategic partner with the South East maths hub.
The ETAL website hosts resources from the project.

2.1 Does your project support transition to the new national curriculum? Yes

The National Curriculum 2014 was explicitly used to provide the subject knowledge input for each half termly session. In addition, a focus was placed on aspects of the new curriculum such as: new mathematical content including teaching methods and resources; the concept of mastery maths; using manipulatives alongside algorithms; differences between the 2014 and previous curriculum; writing a calculation policy addressing the new curriculum. Whilst an emphasis was placed on numeracy and number facts there was also a focus on the aims of the new curriculum so fluency, reasoning and problem solving were highlighted, developing conceptual as well as procedural knowledge.

Resources are now available to support the new curriculum roll out across the teaching alliance.

2.2

Resources can be found on the website www.etal.org.uk

3. Theory of Change and Evaluation Methodology

3.1
Table 1- Outcomes

Description	Original Target Outcomes	Revised Target Outcomes	Reason for change
Teacher Outcome 1	Increased subject knowledge and greater awareness of subject specific teaching methods in maths for key stages 1 and 2, looking to incorporate KS 3 in Year 2. Specifically, addition, subtraction, multiplication and division with manipulatives to support teaching of algorithms. Fractions, decimals and problem solving.	Unable to incorporate KS 3 in Year 2.	Non-participation of secondary schools.
Teacher Outcome 2	Increased teacher confidence	No changes	
Teacher Outcome 3	Delivery of higher quality teaching including subject-focused and teaching methods	No changes	
	Use of better subject-specific resources Resources, specifically manipulatives that link to the four calculations and as an aid to algorithms are being used.	No changes	

	NCETM videos are being used in workshops and in schools to support the teaching of using these resources. Hard Copy video and Web directed resources available for Primary and secondary practitioners		
Pupil outcome 1	Increased educational attainment and progress Specifically in closing the gap between FSM and other	Changes KS 1-2 not 3	No secondary participation
Pupil outcome 2	Increased levels of progress (point scores and % achieving higher point scores than expected) ALL Pupils showing increased levels of progress against expected school projections SDP	Changes KS 1-2 not 3	No secondary participation
Pupil outcome 3			
Wider system outcome 1	Teachers/ schools **involved in intervention** making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice	No changes	
Wider system outcome 2	Programme activities/ model is embedded in schools planning. Participating schools will have project embedded in SDP **beyond the intervention group**	No changes	
Wider system outcome 3	Use of better resources by teachers/ schools **outside the intervention group** **Long term aim 2016/17**	No changes	

3.2
Changes were made to the project's activities after the Theory of Change was validated.

These changes were:
Originally an attendance expectation of 60% was set; however, the project lead realised in the second year that 80% attendance was necessary for maximum impact as, from the original pilot, it was clear how much detail was covered regarding subject knowledge and how quickly and consistently participants need to address this in their schools.

- Star Lesson was used in the second year rather than Iris due to ease of use and value for money.
- Collaboration between primary and secondary schools did not occur. See 3.3 below for details.

3.3
There was a change in Key Stage that was changed from the initial bid**.**

The original bid and theory of change and evaluation framework looked to include secondary schools, so that they could support the subject knowledge input. However there was no uptake from secondary schools. In retrospect, this actually enhanced the delivery of the project, as by focusing very specifically on the primary curriculum we were able to develop our subject knowledge with a specific key stage emphasis. We were also able to consider early years in depth and use this knowledge as a springboard for understanding general primary level maths needs.

3.4 Evaluation of project

There were changes made from the original evaluation plan particularly around the problem of data collection and collation; however, because the first year was set up as a pilot, these areas were addressed in the second year:

- Teachers assessed their subject knowledge through audits produced by the National Centre for Excellence in Teaching Mathematics (NCETM). Data was collected and collated with the intention of comparing at the end of the pilot. During this time, due to the new 2014 curriculum change, the NCETM made changes to their audits meaning we were unable to compare 'like with like' for cohort 1.
- Contextual data was not collected for cohort 1 due to the sample size being too small. For the second year, we were able to collect this data.
- Trend data was not originally collected due to difficulties in obtaining this from schools.

4. Evaluation Methodological Limitations

4.1 The main methodological limitations of the evaluation.

- Identifying a comparison group within the primary schools was not possible as elements of classroom practice could be influenced due to the nature of primary schools and their practice.
- It is difficult to claim that the project was the sole contributor to pupil progress in mathematics, as we cannot control for other mathematical interventions taking place in the thirteen primary schools.
- Teacher subject knowledge audits are reliant upon self-assessment, meaning that it may only be after the professional development and the re-auditing that teachers realise what they 'don't know'. This can lead to a skew in their audit measurements.
- Assessment procedures changed over the period of the project; this meant that we not always able to compare like for like progress data at pupil level.
- The original project author, who wrote the successful bid, left the project at the very beginning due to relocation. This meant that the time period of the project ran for only 19 months rather than the full two years. Embedding of new practice is difficult to show over this shortened time frame.
- The use of video capture technology as a means of specifying improvements in teaching and resources emerged as a separate project in itself and will require much more time to see an impact on practice.

4.2 Planning for the continuation of this project.

The project lead has left to take up a head teacher role of a school in special measures and will use project outcomes to support the school in the teaching and leading of maths in order to raise attainment and achievement.

As a strategic partner with the South East maths hub, ETAL will support maths within the hub using outcomes and lessons learnt from the project.
As part of teaching school activity, it is planned to designate SLEs of maths to facilitate this. ETAL will invite leaders who participated to apply to become a Specialist Leaders of Education.
Resources from the project will continue to be shared via the ETAL website.

How will impact be evaluated going forward?

SLE impact will be measured through qualitative school feedback and reported to the National College of Teaching and Leadership; school impact will also be measured through attainment and progress scores.

5. Project Costs and Funding

5.1

Table 2 - Project Income

	Original[1] Budget	Additional Funding	Revised Budget [Original + any Additional Funding]	Actual Spend	Variance [Revised budget – Actual]
Total LSEF Funding	180,550	0	180,550	180,550 (with reconciliation)	0
Other Public Funding	0	0	0	0	0
Other Private Funding	32,000 (from schools)	0	32,000	32,000	0
In-kind support (e.g. by schools)	9680	0	0	0	0
Total Project Funding	212,550	0	212,550	212,550	0

Details of in-kind support
Schools contributed to part of the supply cover costs for the second year by not claiming for the full supply amount as they did in the first. This amount totalled (over all schools) £9680.

Table 3 - Project Expenditure

	Original Budget	Additional Funding	Revised Budget [Original	Actual Spend	Variance Revised budget – Actual]

[1] Please refer to the budget in your grant agreement

			+ any Additional Funding]		
Direct Staff Costs (salaries/on costs)	0000			Project lead (head of teaching school): 45600	+ 45600
Direct delivery costs e.g. consultants/HE (specify)	0000			IOE coaching: 2500 Actual delivery: ETAL: 11 days @ 5500	+ 8000
Management and Administration Costs	3350			6100	+ 2750
Training Costs	5000			5000 IOE manage 11 x 500 5500 =10500	+5500
Participant Costs (e.g. Expenses for travelling to venues, etc.)	0000			0000	0
Publicity and Marketing Costs	0000			1000	+1000
Teacher Supply / Cover Costs	100,100			35000	-65100
Other Participant Costs Iris Connect Video Capture technology x 11 schools, inc licenses @ £8,000 per system	88,000			@57060	-30940
Evaluation Costs	5000			12500	+7500
catering costs consultant for strategic planning Resources for teaching of mathematical manipulatives	0000			3000 1791.23 262.84	+3262.81
Total Costs	201450			165505.30	22,421.19

5.2 Commentary on Project Expenditure

- The original budget projected a different professional development model, one that that was geared towards teachers meeting more often but without any specialist input. Due to various factors, this model changed prior to implementation, which, meant that not only did the supply budget need to be trimmed but also, more monies needed to be available for actual training and hosting of the CPD.
- To manage supply costs in year 2, schools were asked to match fund the supply costs, as this would show their commitment to the project and reduce supply costs.
- The original budget had set out just 20 days for project management. This was increased due to additional responsibilities in relation to project evaluation and professional development, e.g.: rewriting the initial theory of change and evaluation, planning and hosting the professional development sessions, writing reports, attending meetings, collecting data, administrate, liaising with strategic partners, managing the website.
- The budget for support from the IOE was increased in order to better support the development of leaders with impact evaluation and to lead coaching sessions for cohort 1 teachers so that they were better able to support cohort 2.

- Star Lesson video capture technology was used in place of Iris, at a lower cost. This reduced by a third the amount spent on video capture.
- In the original budget, catering and resources for training were not accounted for.
- The variance has been asked to be reconciled with a further step to the project working in two more schools with a streamlined delivery.

6. Project Outputs

Reporting against agreed output indicators, as agreed in schedule 3 of the Funding Agreement and outlined in the evaluation framework.

Table 4 – Outputs

Description	Original Target Outputs	Revised Target Outputs *[Original + any Additional Funding/GLA agreed reduction]*	Actual Outputs	Variance [Revised Target - Actual]
No. of schools	14	13	13	0
No. of teachers	34	16	16	0
No. of pupils	839	480	480	0

7. Key Beneficiary Data

7.1 Teacher Sub-Groups (teachers directly benefitting counted once during the project)

Definition for number of benefitting teachers
This is defined as the teachers who personally attended all the sessions as active participants. Registers were taken for every session with an average attendance of 93%. Although it appears from the qualitative data that other teachers also benefitted (see final questionnaire analysis **Appendix 3),** these numbers were not included in the percentages below.

Table 5 – Teachers benefitting from the programme

Headteachers were asked to identify either existing or potential/aspiring maths leaders. One teacher was identified per school.

	No. teachers	**% NQTs *(in their 1st year of***	**% Teaching 2 – 3 yrs**	**% Teaching 4 yrs + *(teaching***	**% Primary (KS1 & 2)**	**% Secondary (KS3 - 5)**

		teaching when they became involved)	***(in their 2nd and 3rd years of teaching when they became involved)***	***over 4 years when they became involved)***		
Project Total	*16*	*6.25*	*18.75*	*75*	*100*	*0*

7.1.2 Commentary on teacher sub-groups

As expected, there were very low numbers of NQTs and headteachers were more likely to identify experienced teachers for this leadership role. The one NQT who was identified for the project was identified because she had maths A Level and the headteacher wanted to build on her subject expertise.

7.2 Pupil Sub-Groups (these are pupils who directly benefit from teachers trained)

We asked Cohort 2 teachers where possible, to specifically concentrate on those children not making expected progress (excluding SEN). Throughout Lewisham the gap between FSM and non-FSM children continues to apply so teachers were reminded to consider these children if this was pertinent to their classroom context. Teachers provided data on a small sample of children in the class they were teaching i.e.4-6 pupils per teacher, for the purpose of impact evaluation, although there would obviously have been a wider impact on all pupils in the class. Therefore whilst the table below shows the sub-group breakdown of the actual target pupils, the corollary is that all 30 pupils in each class would benefit. Pupils outside of the actual participant's class were not counted although headteacher feedback **(Appendix 3**) showed that impact was made.

Tables 6-8 – Pupil Sub-Groups benefitting from the programme

	No. pupils	**% LAC**	**% FSM**	**% EAL**	**% SEN**
Project Total	*54 (two data sets missing) One participant was promoted to deputy head and was unable to send the information due to leaving the school. Another participant was unable to provide due to illness.*	*1.9%*	*25.9%*	*18.5%*	*0%*

	No. Male pupils	**No. Female pupils**	**% Lower attaining**	**% Middle attaining**	**% Higher attaining**
Project Total	*42.6%*	*57.4%*	*35.2%*	*57.4%*	*7.4%*

	% Asian Indian	% Asian Pakistani	% Asian Bangladeshi	% Asian Any Other background	% Black Caribbean	% Black African	% Black Any Other Background	% Mixed White & Black Caribbean	% Mixed White & Black African	% Mixed White & Asian	% Mixed Any Other Background	% Chinese	% Any other ethnic group
Project Total	*0*	*1.9%*	*0%*	*1.9%*	*18.5 %*	*20.4 %*	*5.6%*	*5.6%*	*1.9%*	*0%*	*5.6%*	*0%*	*3.7%*

	% White British	% White Irish	% White Traveller of Irish heritage	% White Gypsy/Roma	% White Any Other Background
Project Total	*31.5%*	*1.9%*	*0%*	*0%*	*7.4%*

8. Project Impact

8.1 Teacher Outcomes

Date teacher intervention started:
Pilot group January 2014 (cohort 1),
Full group September 2014 (cohort 2)

Table 9 – Teacher Outcomes: teachers benefitting from the project

The 1st Return is baseline data collected before the start of project.

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1st Return and date of collection	2nd Return and date of collection
Increased subject knowledge and greater awareness of subject specific teaching methods in maths for key stages 1 and 2.	***See Appendix 4:*** *NCETM online subject knowledge audits These were taken from the NCETM site but the project lead condensed the areas to aspects that linked to the project. Participants were given time within the project to ensure that the data was collected.*	*12 respondents from a total of 12 invitations.*	*See Appendix 4 – three different scales are used for the three different key stage audits.*	*September 2014*	*July 2015 Shift in subject knowledge of: 10.1% for early years teachers; 12.9% for KS 1 teachers; 13.2% for KS 2 teachers with a median of 10.9 %.*
Increased teacher confidence	***See Appendix 3:*** *Teacher self-confidence online audit for participating lead teachers and teachers coached by these lead teachers based on Husbands, C. and Pearce, J. (2012) What makes effective pedagogy? Nine claims from research from the National College for Teaching and School Leadership. This was collected in the form of an on-line survey that was anonymised to support the answers being as 'real' as possible. Obviously, as this relies on participants' own evaluation of themselves, true objectivity is not realised.*	*12 respondents from a total of 12 invitations.*	*For lead teachers: 9 questions about confidence with aspects of pedagogy scaled 1-5 (least to most confident), additional end of project questions about development of leadership capacity, some text fields to allow for explanation of gradings (see Appendix 3 for question items)* *For coached teachers: 9 questions about impact of coaching on confidence with aspects of pedagogy scaled 1-5 (least to most confident), additional questions about impact on pupil outcomes and some text fields to allow for explanations of gradings*	*September 2014*	*July 2015 Cumulative measurement shows positive impact on 8 of the 9 areas.*
Delivery of higher quality teaching including subject-focused and teaching methods	*Impact evaluation frameworks written - available on request. Each group (pilot and second year) had a*	*12 respondents from a total of*	*Teachers asked to articulate impact on pupils and practice in relation to a focus group of pupils*	*September 2014*	July 2015 *83.3% of head teachers stating that*

	session to support their completion of the impact frameworks. All participants had not used this method previously so needed a cultural shift in implementation and delivery. Data outcomes show positive impact on pupil progress and teaching.	*12 invites.*			*they believed the project had had a positive impact on the teaching and learning across the school*

8.1.1

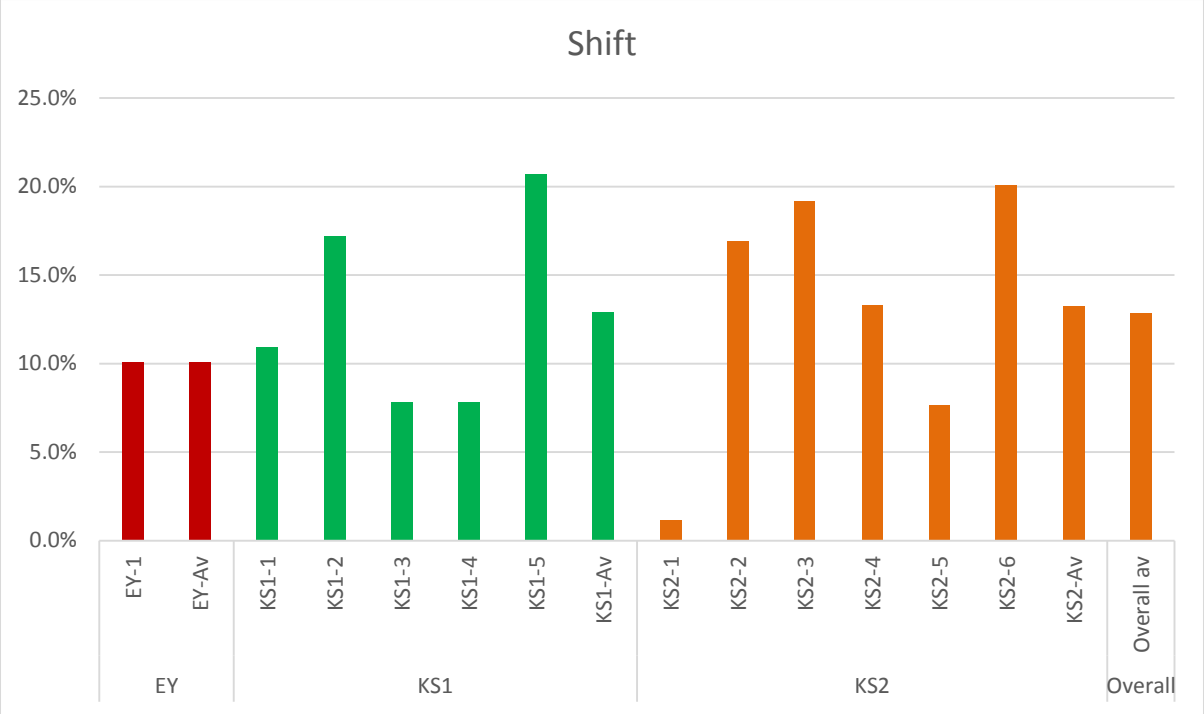
The sample size was 13 maths leaders over 13 schools. One teacher withdrew from the programme due to a change in role leaving 12 teachers in the main group by July 2015.

The impact frames were used to plan the programme of professional development. They were used to support leaders in reflecting not only on their own teaching and being able to detail what changes in practice had impact but also to use as a mechanism that would help them to support their colleagues. By detailing the change in their practice and subsequent outcomes, it was expected that they would then be able to 'pass this knowledge/experience on' to others who hadn't themselves experienced the full process. It was interesting that this aspect of the project was one were the participants were very reluctant to engage in at the beginning of the process but by the end the majority clearly started that they could see the benefits the impact frames had had not only on their own pedagogic practice but also being able to translate this to others. It was really helpful to ask the original pilot group to support the second group in writing their impact frameworks, as I believe this helped the second group to understand the process quicker.
Subject content and pedagogy themes were drawn from the frames by the professional development lead. The frames also enabled teachers to focus their changes in practice to achieve the outcomes they wanted for their pupils. The impact frames were updated in July as a reflective tool for practitioners in order to enable them to review their progress and decide what further developments to practice they would prioritise.

Impact:

a) National Centre for Excellence of Teaching in Maths (NCETM) audit (appendix 4)

Questions were selected from the NCETM audit, based on mathematical content that matched the focus of the professional development programme. Also teachers were asked to audit themselves against all items focused on pedagogy in maths. There were three different audits, with three different sets of questions: Early Years, KS1 and KS2. See Appendix 4 for full analysis. The shift in scores from September 2014 to July 2015 was measured.



Eight teachers shifted by more than 10%. The range of shift was 1.1% to 20.7%, the mean being 13% and the median 10.9%. The older the key stage, the greater the shift, with the averages being: 10.1% for Early Years, 12.9% for KS1 and 13.2% for KS2.

b) Teacher self-confidence audit – see Appendix 3

Before and after self-confidence scores revealed low impact, however comments from lead teacher highlighted considerable positive impact. It is likely that this is due to teachers realising what they 'don't know' through the programme (especially for confidence in embedding Assessment for Learning techniques) – see 4.1 above. Teacher comments highlighted strong impact on:

- Pupil confidence, attainment and progress;
- Teacher subject knowledge, understanding of progression and best practice in pedagogy for maths;
- Improved leadership skills and confidence.

Opportunities to reflect on their own practice, time for collaboration with colleagues and tasks/resources to use in their own schools were valued aspects of the programme. Embedding assessment for learning had negative scores; this was originally planned to be covered during the project but it was soon realised that this was not possible in the time frame in light of the national changes that schools were undergoing.

Although there were only two responses to the coached teacher questionnaire, those who did respond highlighted positive impact on several aspects of their classroom practice.

Issues to consider in order to support future sustainability:

- Ensure the programme retains its focus on the development of subject knowledge, progression and pedagogy in maths;
- Ensure any future programme builds in opportunities for teachers to reflect on their own practice, time for collaboration with colleagues and tasks/resources to use in their own schools;

- Gather more evidence of impact on coached teachers to understand the broader picture around impact of the lead teachers' professional development.

8.2 Pupil Outcomes

Date pupil intervention started:
Pilot: February 2014 to July 2014
Year 2: September 2014 to July 2015

See Appendix 5: Cohort 1 pupil data analysis.
The findings from the pilot group indicate that of all teachers who submitted full data sets, all bar one have made more than national and local expected progress for their cohort and many have more than doubled these rates.

See Appendix 6 for Cohort 2 pupil data analysis.

Table 11 – Pupil Outcomes for pupils benefitting from the project

The 1st Return is baseline data collected before the start of the project.

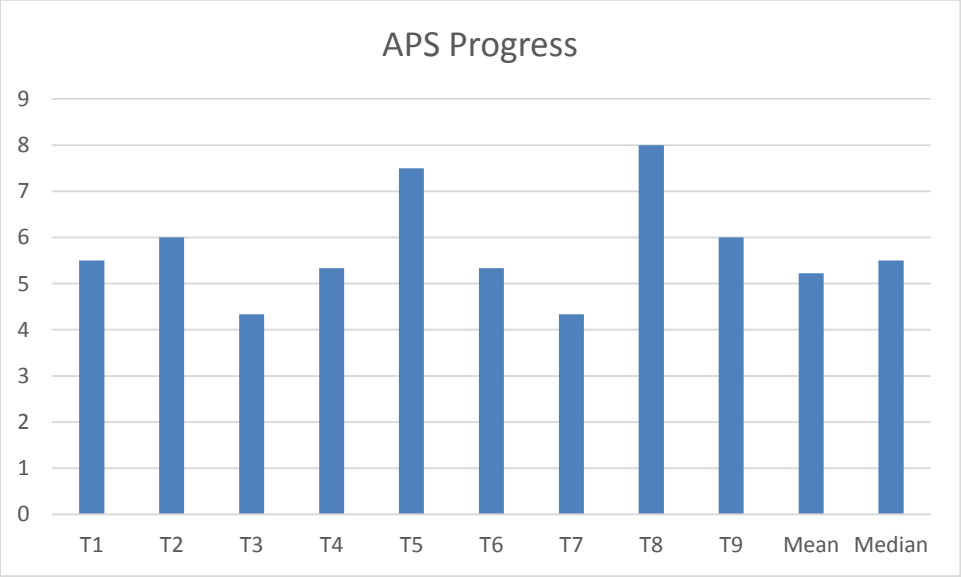
Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1st Return and date of collection	2nd Return and date of collection
Increased educational attainment and progress ***Specifically in closing the gap between FSM and other*** *	*Pupil assessment data for focus pupils* *Statutory outcomes for maths at EY, KS1 and KS2 for all engaged schools*	*9 out of 12 matched data sets collected (two teachers failed to provide data, one set of data is for Reception and therefore could not be compared using APS – see below)*	*Progress using point scores from beginning to end year* *Nos. at Expected or Exceeding for Mathematics at end EYFS 2014 and 2015; nos. at L2 or L3 for Maths at end KS1 2014 and 2015; nos. at L4, 5 or 6 for Maths at end KS2 2014 and 2015;*	*September 2014*	*July 2015 Points progress made over the year by participants' pupils: 5.5; 6; 4.3; 5.3; 7.5; 5.3; 4.3; 8; 6.* *(mean: 5.2; Median: 5.5)*
Increased levels of progress (point scores and % achieving higher point scores than expected) ALL Pupils showing increased levels of progress against expected school projections	Increased levels of progress (point scores and % achieving higher point scores than expected) ALL Pupils showing increased levels of progress against expected school projections	*9 out of 12 matched data sets collected (two teachers failed to provide data, one set of data is for Reception and therefore could not be compared using APS – see below)*	*Progress using point scores from beginning to end year* *Nos. at Expected or Exceeding for Mathematics at end EYFS 2014 and 2015; nos. at L2 or L3 for Maths at end KS1 2014 and 2015; nos. at L4, 5 or 6 for Maths at end KS2 2014 and 2015;*	*September 2014*	*July 2015 Points progress made over the year by participants' pupils: 5.5; 6; 4.3; 5.3; 7.5; 5.3; 4.3; 8; 6.* *(mean: 5.2; Median: 5.5)*

SDP	SDP				

8.2.1

***** It is not possible to state that the gap was closed between FSM pupils and other pupils as, due to logistical difficulties with the collection process, the data was not collected in this way; schools themselves were having problems with identifying FSM due to the Ever 6 and Pupil premium. However, participants were asked, where possible, to concentrate on FSM pupils for their target groups when using the impact framework. Although there was improved pupil progress I can not state that the gap itself was closed as it could be seen that all pupils made progress.
Teachers were asked to specifically concentrate on those children not making expected progress (excluding SEN). They were asked to identify a sample group of 4/6 pupils as a focus group in relation to their impact frames and for whom they had concerns about attainment and/or progress. The sample may not therefore be representative of the class as a whole, but does represent the target cohort for the project. The teachers continued to teach the rest of their class as usual so that all children would be able to benefit from any project impact but teachers focused on a small number of target children in order that they could pinpoint how specific teaching strategies had impacted on the learning. This meant that teachers would find it easier to replicate any positive impact, as they would have more clarity around what particular aspects of the teaching had actually made a difference to the pupils' learning.

Progress was tracked using APS from September 2014 to July 2015. An expected annual progress rate might range between 3 APS (national expected progress across KS2) and 4 APS (consistent with the top 25% of schools nationally).



In fact, all groups of pupils exceeded both 3 and 4 APS progress, with a range from 4.3 to 8 APS. This meant the average progress across the pupil cohort was 5.2. For the one Reception cohort, all pupils ended the year at Exceeding in the Mathematics strand, again corroborating the impact the programme had on pupil outcomes.

Given that these pupils were identified as not making expected progress, this is strong evidence that the changes to teacher practice had an impact on pupil attainment.

The results from the head teacher's questionnaires showing qualitative impact indicate that there were gains across the school as well as individual's classes with 83.3% of head

teachers stating that they believed the project had had a positive impact on the teaching and learning across the school, leading to 50% of head teachers indicating that there had been a positive impact on pupil outcomes in maths across the school. **Appendix 3**.

8.3 Wider System Outcomes

Table 13 – Wider System Outcomes

Target Outcome	Research method/ data collection	Sample characteristics	*Metric*	1st Return and date of collection	2nd Return and date of collection
Teachers/ schools involved in intervention making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice	*Attendance at professional development sessions* *Numbers of teachers trained to lead CPD.*	*Attendance tracking sheets* *Numbers of trained lead teachers*	*% attendance* *Nos of teachers*	*July 2014: Cohort 1 face-to-face days 100% full attendance* *Cohort 1: 7 teachers trained to lead PD year 1*	*July 2015: Cohort 2: July 2014 12 schools, 12 teachers participating in sessions. 93% attendance* *Cohort 2: 12 teachers trained to lead maths in their own school* *Headteachers state 83.3% positive impact on leadership skills of lead teacher. 83.4% positive impact or better on subject knowledge of lead teacher.*
Programme activities/ model is embedded in schools planning. *Participating schools will have project embedded in SDP beyond the intervention group*	*Analysis of school-level strategic planning* *HT online questionnaire*	*All participating schools provided evidence* *Six HTs completed questionnaire from a possible 13*	*Page to articulate engagement with project forms part of SDP* *Scale 1-5 (little impact to significant positive impact) to assess impact from project on 4 key areas, text fields to explain answers, yes/no to express whether the school would participate again*	*September 2014. 0 schools have project as part of their SDP.*	*July 2015 12 schools (100%) have project as part of their SDP.* *Headteachers state 83.3% positive impact on teaching and learning across the whole school.*
Use of better resources by teachers/ schools outside the intervention group *Long term aim 2016/17*	*End of project event*	*All participants required to attend and contribute.*	*% of teachers contributing to resources available to share and uploaded on to website.*	*September 2014 0% of teachers contributing*	*July 2015 100% of teachers contributed*

8.3.1

For the project to have a chance of having an impact on wider system outcomes it was necessary to ensure that schools were fully committed to the project. Meeting with headteachers to clarify their commitment to the project (beyond sending a leader on some PD) was necessary in order to have a chance of wider system impact. Being part of the whole school development plan guaranteed time for participants to disseminate within their schools, this was in fact a requirement of participation so that the professional development was not contained to one individual. It also meant that there was a continuous dialogue between the schools, project lead and each other meaning that we were all learning from each other and deciding on next steps. Headteachers completing the on line questionnaire regarding wider impact in their schools beyond the participant, spoke of over 83.3% positive impact on teaching and learning across the school.

By taking account of initial teacher feedback on subjects they wanted to cover (e.g. the new curriculum, using manipulatives, overhaul of calculation policies) this ensured that all teachers understood the relevance of the sessions and attended regularly. For the main sessions there was attendance of 93% and for the coaching sessions the attendance was 87.5%.

To support the wider dissemination within schools, the second year of the project encouraged head teachers to see the project as contributing to succession planning. Headteachers therefore sent twice as many teachers into Cohort 2 as they did for Cohort 1. Cohort 2 teachers stated that they had not supported any teachers in their own schools in 2013-14, but during 2014-15, they had opportunities to support 144 teachers across the 12 schools. This demonstrates the cascade effect of the learning model.

A template was produced to support schools in addressing the project aims as part of their SDP, this was used by all engaged schools with the effect that there was a whole school focus and commitment on the project allowing participants to actively mobilise knowledge within their schools.

The end of project event that required all participants to contribute to the resource bank enabled all to participate which, not only supported the dissemination of knowledge through the sharing of resources, also allowed leadership skills such as presenting to an audience and focusing on impact evaluation to be developed.

Challenge Partners' feedback from one school in May 2015 confirmed that mathematics had been a whole school focus this year with teachers and leaders ensuring that the new curriculum had been introduced. Data evidences the positive impact of the actions taken.

Questionnaire analysis **(see Appendix 3):**

Headteachers felt the project has had a positive impact on the maths subject knowledge and the leadership skills of the participants and that this has had an impact both on teaching and learning and pupil outcomes. Some indicated that although the impact of the project on pupil outcomes was not yet visible, it would emerge in the future.

All headteachers would want to participate in the project if it continued. The only reservations they had around future participation were to do with difficulties in funding supply cover and the need for a future programme to not repeat this year's content.

Issues to consider to support future sustainability:

- Ensure the programme retains its focus on the development of subject knowledge in maths and leadership skills;

- Ensure any future programme can meet the needs of new lead teachers and those wishing to develop their practice further.

8.4 Impact Timelines

It was expected that there would be an impact on teachers immediately following the first professional development session where teachers were asked to complete impact frameworks pinpointing the difference they wanted to make and what steps they would take to effect this change. Because teachers spent time detailing the changes they wanted to implement and considering pedagogical strategies to address these changes, it was expected that this would then impact upon their teaching practice with immediate effect and therefore have impact on the focus pupils.

The professional development programme was a continuous process so that teachers could build up layers of subject knowledge and pedagogic knowledge as part of a reflective cycle. The pilot study showed that after six months all pupils made better than expected progress **(Appendix 5)** so this was expected in the second year.

Wider school outcomes were expected to show impact as the year progressed. It was expected that schools support the project by including the aims on their school development plans and committing part of their own CPD timetable for the dissemination of skills and knowledge from the project. This meant that the impact on wider school outcomes was expected during the year.

The project focused on supporting sustainability e.g. enabling leaders to disseminate within their own school; using a coaching model to support participants in dissemination; making sharing of resources a criteria for evaluation; adding video capture technology to the process so that specific points cold be shared. This means it is likely that there will be a continuation of the impact beyond the end of the funded project.

9. Reflection on overall project impact

The pilot project allowed us to plan for baseline evidence gathering for Cohort 2. During this pilot, the data tools were created to enable the project lead to identify the needs of Cohort 2 in detail.

The use of the impact frames, the self-confidence audit and the NCETM audit for Cohort 2 meant that the project lead had a clear baseline in terms of teacher subject knowledge, teacher confidence and pupil needs. The project lead was able to tailor the professional development programme specifically to the needs of the teacher cohort.

In terms of impact on teacher practice and pupil outcomes, comments in response to teacher and Headteacher questionnaires and NCETM audit impact corroborate the programme's focus on:

- Improved subject knowledge;
- Understanding how to support gaps in pupils' mathematical understanding;
- Developing teaching strategies;
- Increasing maths leaders' leadership skills and confidence to share and support others' subject knowledge.

This did make a difference to pupil outcomes and ensured that a cohort of pupils identified as at risk of underachieving made very strong progress during the year of the project.

The numbers of teachers supported by cohort 2 teachers (see 8.3.1) shows that teachers were enabled to develop the confidence to disseminate their learning through the programme. They highlighted in questionnaire responses the value of working collaboratively to develop practice.

Although questionnaires for teachers show minimal impact on confidence, we believe this is because it is likely that they only realised what they 'did not know' through the duration of the project. Headteacher responses indicating that there was an impact on teacher practice and impact on pupil outcomes, would also suggest this to be the case.

The project has left a legacy of 21 lead maths teachers in Lewisham schools, who have developed their teaching practice and their maths leadership skills, and have a range of resources to support professional development of colleagues in their own schools.

Two aspects of the theory of change were not developed:

- The use of Iris/Star Lesson video capture technology: More time is required for all teachers to use this effectively but it is predicted that schools will continue to use the technology to continue to support the teaching and learning. Pupils have already begun to use video capture technology to share their learning. Teachers have already begun to explore the use of video for teacher professional development and supporting parents' understanding of maths learning. Both these aspects will need to be further developed in 2015-16;
- Collaboration between primary and secondary schools: This did not occur due to low uptake from secondary schools.

In terms of the meta-analysis themes:

1. Use hub models of delivery (including those using inter-school networks, peer-to-peer support etc.): the benefits of working across schools with a central lead are clear from the impact of this project, and specifically identified as an enabler by participating teachers.
2. Work with Higher Education Institutions (HEI), Subject Associations and employers: the support provided by the IOE for impact evaluation was vital as it helped the

project lead develop the tools to baseline teacher practice and pupil outcomes in order to personalise the programme for participating teachers. This has led to increased impact for teachers and pupils. The IOE was also able to provide professional development for teachers that focused specifically on the development of leadership skills. This has been clearly identified as successful by the headteachers and the numbers of teachers being supported by lead teachers is testament to the success of this input.

10. *Value for Money*

10.1 Apportionment of the costs across the activity

Broad type of activity	Estimated % project activity	£ Estimated cost, including in kind
Producing/Disseminating Materials/Resources	35%	42000
Teacher CPD (face to face/online etc.)	35%	54183
Events/Networks for Teachers	10%	5262
Teacher 1:1 support	3%	5000
Events/Networks for Pupils	2%	2000
Video capture	15%	57060
TOTAL	100%	165505

10.2 Commentary of value for money

- £165,505 divided by pupil costs= Cohort 1: 6 teachers, cohort 2: 12 teachers= total 18 teachers; 18 teachers x 30 pupils per class-540 pupils =£306.49p per pupil.
  This compares to £507 per pupil for initial forecast.
  The original bid forecast for 14 teachers rather than 18 and some supply costs were taken up by participating schools to show their commitment.
  As the project was based on continuous evaluated PD that focused on the development of teacher's subject knowledge beyond that of the actual participants; the bulk of the budget was taken on the researching of and dissemination of this knowledge.

- The project was successful in its aim to improve pupil's achievement beyond the usual trajectory, as the focus was on pupils who had not made good progress the fact that these pupil's made better than expected progress shows that the project was successful for its outlay. In addition it also enhanced teacher subject knowledge amongst the participants as well as having an impact on teaching and learning in their schools as a whole.

11. Reflection on project delivery

11.1 Key Enablers and Barriers to Achievement

What were the key enablers?

- Teachers and schools being fully committed to the project as evidence by % attendance (close to 90%)
- Schools being fully committed and responding to a need leading to the upscale in numbers for year two
- A developing understanding from head teachers as to how the project could support succession planning with the inclusion of NQTs and teachers with less than three years experience in cohort 2.

What were the key barriers?

- One person leading means that succession planning needs to be considered and the expertise could disappear if the lead moves to a different school. This happened for 2 teachers in cohort 1.
- Developing a system to measure impact across schools' different assessment systems was challenging and will continue to prove problematic for future projects.
- Whilst the use of video technology within a school supported the participants within their own area, it takes longer to embed within a whole school.
- It wasn't possible to engage secondary schools.

Factors to improve teacher subject knowledge:

- Sustained long term professional development that engages teachers in the construction and design of the programme through a continual feedback loop.
- Tasks and resources for participating teachers to use in their own schools meaning learning was shared and embedded across the schools.
- Input by specialists from within and beyond the alliance.
- Addressing issues of pressing concern for teachers and schools to ensure engagement and uptake e.g. the new national curriculum.

Key lessons learnt

- Using a pilot group allowed us to assess what was needed for teachers and schools and understand how best to implement this operationally. It also helped us to understand how the data could be captured in a way that was realistic for schools and teachers yet was robust enough to evaluate impact. Evaluation plans for cohort 2 were carefully constructed in consultation with cohort 1 teachers in order to ensure this was fully captured in year two.

- Inclusion of the project aims in school development plans ensured there was commitment to mobilising knowledge throughout the schools rather than simply developing the practice of individual teachers.

- Collecting data in the original pilot was difficult so building in a data capture session as part of the second year sessions enabled data and impact evaluation frameworks to be collected easily and allowed pilot teachers to support second year teachers in doing this.

11.2 Management and Delivery Processes

The role of the project manager was key to insuring effective management and delivery of the project. The project manager was able to organise and design professional development sessions, manage evaluation requirements and ensure effective communication between teachers and headteachers engaged in the project. Building in time for data collection and knowledge mobilisation meant that teachers were able to fully participate in the project and its focus.

11.3 Future Sustainability and Forward Planning

The project lead is taking a head teacher role and is keen to develop maths across a further two schools using the project structure and resources. The use of video capture technology will allow the participating schools to stay in contact and share resources. The website will be updated with resources as they become available from the participants, these in turn can then be used by new participants. The teaching school is in a strategic partnership with the southeast maths hub so will support networks and also has the possibility of committing time to developing maths SLEs who can then be supported to disseminate knowledge and resources from the project.

Our final session allowed participants to share their knowledge and resources with the group. This was then curated to put on the website alongside the resources from the last two years from each session and from other parties that contributed in some way such as NCETM, IOE.

It would be interesting to explore the possibilities of cross-phase work with secondary schools in the future.

The key legacy of the project is the 21 lead teachers currently working in schools within and beyond Lewisham. They have developed expertise as maths teachers and leaders, which will impact on future pupils and teachers in London schools.

12. Final Report Conclusion

Key conclusions regarding findings and any lessons learnt.

Key findings for assessment of project impact

Outcomes the evaluation suggests were achieved?

- The subject knowledge of subject leaders was developed.
- Leaders were able to pinpoint the specifics of good maths teaching
- Leaders were able to disseminate these skills and knowledge within their own school to have impact beyond their own participation
- Resources were created to support teaching and learning
- Pupil made better than expected progress
- 100% of Headteachers would commit to further participation in the project, as the outcomes were evident in pupil progress and in the impact of the maths leader within their schools.

Whilst it is difficult to collate qualitative impact I believed that it was important to capture this aspect and by setting up online anoymised questionnaires for headteachers, participants and members of the participating schools I believe this triangulation gives the qualitative impact data robustness albeit within a small group.

The Analysis of qualitative impact shows that the project had a positive impact on many different areas of teaching, learning and leadership including subject knowledge, pupil outcomes and pedagogic processes (Appendix 3). Headteachers' feedback stated that this was not just in the participants' classrooms but also across the wider school. I would suggest that the process of a continuous feedback supported this to happen as participants were able to implement and practise in their own classrooms before disseminating knowledge within their own school as well as being able to discuss the finding within the regular group meetings.
I believed it was important to support the pedagogic process and by supporting leaders to evaluate their own pedagogy it would be easier for them to support others. The focus on subject knowledge was a non-negotiable for my involvement in the project and I believed this area was one where exposition was to be encouraged.

In addition to the wider school impact, which included improved teaching and learning and maths outcomes, all targeted pupils made better than expected progress. As this data has been collected regularly by schools for years and informs their progress analysis, as well as forming part of national data collection for end of key stage I am confident this data is sound.

Positive feedback included the welcoming of support for the implementation of the National Curriculum 2014 in addition to how schools had benefitted from the focus on subject knowledge. Participants stated, through self-evaluation, positive impact from the project in all areas except assessment (this area had not been an area to target as through feedback it was understand that schools were in the process of developing assessment after levels.)

- *Outcomes the evaluation suggests were not achieved or partly achieved?*
  There was not enough time for the video capture technology to be utilised effectively by all participants. Those that did manage were able to use videos to support other teachers, children and also parents. After the end of project feedback from participants, other teachers saw the possibilities of the video capture-such as support for parents, Learning Support Assistants and pupils themselves and formed support networks to help each other with implementing this in their own schools.

Key lessons learnt for assessment of project delivery

Having a continuous stream of professional development allowed participants to use input within their own school but then to also contribute to the learning pathway of group as a whole not only were participants learning from the input but they were also learning from each other and all had a relationship to the group as a whole, which ensured they were committed to and focused on the project goals.

Giving participants dedicated time to ensured that the finished presentations were of a high quality and of use to the other teachers.

It might have added value to the project if cohort 1 teachers had been able to share their additional learning (i.e. coaching skills) with cohort 2 teachers.

Collection of data on such a large scale beyond what is a statutory requirement for schools was sometimes difficult. Providing schools and participants with a clear rationale for the collection, support with templates and time helped dramatically to improve the level of engagement.

Informing future delivery

The formal sharing of ideas at the end of the project was a very successful conclusion and helped the mobilisation of knowledge between the participants. It would have been of benefit to make this a focus for each term, as this would have formalised the process of sharing of knowledge within the group.

Whilst the collection of data was imperative for this particular project, it would not be possible to replicate this within a school setting without a dedicated project lead spending a vast proportion of their time on this. However, I think it would be beneficial for schools to consider collection different forms of data alongside the usual APS (or similar) data measures. Subject knowledge and self-efficacy audits can inform the direction of professional development input; impact evaluations not only support teachers to focus on specific aspects of teaching and learning, schools can learn to use qualitative data in a more measureable form as it can show impact, pinpoint next steps and identify reasons behind outcomes.

LSEF 1115 Lewisham: Theory of Change Template

Project Oracle: Level 1
Deadline: 29 November 2013
Submission: Through the online form here: http://project-oracle.com/providers/self_assessment/projects/512f8b31d270c00b00000005/l/level1/level_submissions/512f8f3cd270c00700000009/edit
Please feel free to draw on any information already included in your LSEF application form.

1. What is the problem that you are trying to address?
To close the gap
That standards achieved by children in Maths, Years 6 & 7, are limited by teacher subject knowledge. Heads have confirmed that, specifically for level 6, teachers don't know 'what this looks like.' Year 6 teachers are having to play 'catch up' and having to address gaps in subject knowledge that have occurred lower down the school.
In Lewisham, in maths there is a gap in attainment between children eligible for FSM and those not eligible.
This holds true throughout the country for SAT and GCSE results. We aim to address this and use our findings in a wider context than Lewisham as the project grows.

2. What is the long-term goal that you are working towards?
+Consistently improved standards in Maths, to be achieved through effecting a substantial enhancement to teacher subject knowledge at KSs 1, 2 & 3 at Levels 3, 4,5,6 & 7 in Maths

+ A 20% rise in the percentage of pupils achieving at Level 5 in the pilot Primary Schools. This will give a firmer basis to higher levels in secondary setting. Deepened subject knowledge and enhanced achievement for pupils is anticipated to improve standards on transition into KS3

+Secure transition between yrs. 6 and 7 around teaching, assessment and standards in Maths, which will lead to more rapid progress to L7/8 by the end of KS3 and subsequent higher attainment at GCSE.

+Collaboration between schools, both primary and secondary, that will ensure sharing of knowledge alongside development of resources which will be open to an increasingly wider community.

3. What are the project activities that contribute to the project outcomes? Please list all of your activities below.

Teacher subject knowledge training. There will be specific input with the aid of LA and NCETM to provide training for subject leaders that will then be taken back to schools.
Iris technology will be used to capture parts of lessons, which pertain to teaching and learning, focusing on the areas of subject knowledge that have been addressed in the training, this will have twofold implications 1-to allow teachers to use video capture to dissect teaching strategies and methods and 2. To build a bank of resources for teaches to see what teaching and learning in these areas looks like. A specific example would be-Understanding how manipulatives can help support children's exploration and conceptual understanding specifically around the relationship between procedural fluency and understanding. The IOE will be feeding back to participants on their evaluation frameworks in order that teachers become more aware of evidencing impact

Peer collaboration- We will be *setting up partnerships of teachers to work together using the evaluation frameworks as a focus and iris to enable teachers to share teaching strategies and to feed back difference in classroom practice.*

Assessment data collection will enable us to consider specific groups of children.

4. What are the measurable outcomes that, if achieved, will help meet the long-term goal?
+Increased subject knowledge; will use audits from NCETM

+Use of data to track impact of input on teaching and learning and Increased educational attainment and progress; will use data to track
+Teachers/ schools making use of networks: will set up 'hit' rate on web site.
+ Participating schools will have project embedded in SDP beyond the intervention group: lead practitioners will use pilot findings to take this to wider networks, use of CPD in schools is written into contracts between schools.
+Use of better resources by teachers/ schools outside the intervention group, long term aim 2016/17
+Teachers will have a peer support network to draw upon in order to facilitate subject knowledge transfer and to provide an on-going resource that support the sharing of resources and pedagogical knowledge.
+There will be an assessment evidence base that demonstrates the impact of enhanced subject knowledge upon the quality of teaching and learning
+Teachers will be able to self review and peer review the impact of their learning, as manifest in the improved quality of learning and teaching in their classrooms; self evaluative framework ia a key part of the project with feedback given by the IOE for teachers to consider evidence when evaluating teaching and learning.

1. **Please specify <u>which</u> outcomes each of your activities will affect and describe <u>why</u> you think the activities affect that outcome.**

Activity	*Outcome*
Teacher subject knowledge training	Increased subject knowledge and greater awareness of subject specific teaching methods
Pilot group will focus on use of resources. Iris will be bale to track specifically the teaching and learning using specific resources and iris will be used to set up a bank of video resources that show teachers how to teach specific maths 'subjects' and will also be used for parents to support home learning.	Use of better subject-specific resources
Use of data to track impact of input on teaching and learning	Increased educational attainment and progress specifically in closing the gap between FSM and other children.
Network set up through shared folders and use of teaching school website	Teachers/ schools involved in intervention making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice
Lead teachers will disseminate back to schools through CPD. *Planning will be targeted in order to triangulate outcomes.*	Programme activities/ model is embedded in schools planning. Participating schools will have project embedded in SDP beyond the intervention group.
Resources will be set up through teaching school website for other schools to utilise. Teaching school will disseminate using their	Use of better resources by teachers/ schools outside the intervention group Long term aim 2016/17
Peer collaboration	*Teachers will have a peer support network to draw upon in order to facilitate subject knowledge transfer and to provide an on-going resource that support the sharing of resources and pedagogical knowledge.*
Assessment data collection	*There will be an assessment evidence base that demonstrates the impact of enhanced subject knowledge upon the quality of teaching and learning*
Lesson review via Iris Connect video capture technology (Year 2)	*Teachers will be able to self review and peer review the impact of their learning, as manifest in the improved quality of learning and teaching in their classrooms*

6. For each target group, how are these individuals/groups recruited/referred?

- *The schools involved have already been recruited to the project. Those schools are detailed in the project budget, Schools section*
- *The pilot group of teachers are maths leaders-leaders were chosen because not only do they have a base of knowledge and skills that will allow them to explore and develop quickly the new techniques, building of resources, building of a shared vocabulary, ability to deconstruct teaching and learning with specific examples but they will then have the capacity and ability to disseminate this knowledge in their own schools and then become lead practitioners of the project in the second year thereby creating capacity and sustainability.*
- *The teachers involved have been nominated/ chosen by their Head teacher on the basis of their teaching of Maths in the appropriate phase and their commitment to the project*
- *In the second year, Secondary colleagues, will be recruited on the quality of their subject knowledge*
- *In the pilot year target pupil groups per school are Year 6 and Year 7 pupils. The groups will also be tracked as sub-groups, according to their characteristics, e.g.: gender, EAL, FSM, etc.*
- *In the second year participants classes will be tracked also by sub groups.*
- *FSM will be a particular focus as this is an issue locally and nationally.*
-

7. For each target group, what happens to them at the end of the project?

Teachers have a deepened subject knowledge that will impact positively upon their work with subsequent cohorts. The peer networks will ensure the collaborative exchange and deepening of subject knowledge will be sustained.
Pupils sustain increased levels of achievement in Maths throughout the remainder of their school careers.

NB. A Theory of Change diagram can also be uploaded to the website

Lewisham Evaluation Framework

This document is your tailored Evaluation Framework.

It uses the same template Framework that can be found in Appendix 2 of the LSEF Evaluation Toolkit. However, this Framework contains tailored recommendations regarding which outcomes and indicators your programme should evaluate. Outcomes and indicators marked with a tick are recommended for your programme:

☑ Outcome, indicator or data collection method **recommended**

☐ Outcome, indicator of data collection method **not required**

Recommendations have been made in light of your programme aims and methodology in order to ensure that programmes are able to confidently demonstrate the extent of their impact.

For more information, or if you have any questions regarding your Evaluation Framework please contact:
educationprogramme@london.gov.uk

	Outcomes	Indicators	Baseline data collection[i]	Impact data collection[ii]
Teacher outcomes **Sub Groups** As part of establishing the baseline, the characteristics of the eligible cohort should be analysed across the following sub groups: ☑ NQTs ☑ 3 years + ☑ Primary/ secondary ☑ Other (project specific) These should be expressed as a % of the whole group. **Churn** Throughout the programme thorough records of any "churn" of teachers leaving or joining the intervention group must be kept. In order to do this records must be kept of: ☑ Unique teacher identifier ☑ Engagement date ☑ Disengagement date and reason	☑ Increased subject knowledge and greater awareness of subject specific teaching methods in maths for key stages 1 and 2, looking to incorporate KS 3 in Year 2. Specifically, addition, subtraction, multiplication and division with manipulatives to support teaching of algorithms. Fractions, decimals and ration.	☑ Increased teacher scores in subject knowledge audits (SKA) from the NCETM. ☑ Subject knowledge audits to be taken by all teachers involved in the intervention	☑ Scores collected for individual teachers from pre intervention subject knowledge audits. Audited teachers on knowing and using number facts, calculating, selecting teaching strategies. ☑ NCETM subject audits collected February 2014 and June for pilot. ☑ Audits for year 2 collected in September 2014 and June 2015.	☑ Scores collected for individual teachers from subject knowledge/ audits after Yr1 and Yr2 of intervention Audits take place at start and end of cycles. Pilot Jan and June. Year 2 September and June.
	Increased teacher confidence	Increase scores on Teacher Sense of Self-Efficacy scale: Adapted from Megan Tschannen-Moran, College of William and Mary Anita Woolfolk Hoy, the Ohio State University. Survey to be completed by all teachers involved in the intervention. Teacher confidence surveys should be agreed with the GLA.	Scores collected for individual teachers from pre intervention confidence surveys	Scores collected for individual teachers from post intervention confidence surveys after Yr1 and Yr2 of intervention Interviews/ focus group of sample of survey respondents to moderate survey findings
	Delivery of higher quality teaching including subject-focused and teaching methods	Five schools will use iris during the autumn term. Teachers will be asked to capture an aspect of teaching that they believe to have been successful relating to subject matter from the workshops. Their coach will have supported them with this. Videos will then be uploaded to website with teachers' permission. Possibility is then to roll out video capture technology in other schools.	On the 26th September the coachees and coachees will look at the 'Nine principles of effective pedagogy', marking each principle on a scale of their understanding and confidence. This scale will be used as a tool for the two to discuss teaching, to allow coachees to have a conversation about what they don't feel confident with using the peer assessment tool. At the end of the year the scale will be completed again.	On line peer assess tool. Nine Effective Principles of Pedagogy (Louise Stoll, Alma Harris and Graham Handscomb) will be used at the beginning and end of the year as a measurement tool as well as being used as shared standards, methodology and vocabulary throughout the year.

	Outcomes	**Indicators**	**Baseline data collection**[i]	**Impact data collection**[ii]
	☑Use of better subject-specific resources Resources, specifically manipulatives that link to the four calculations and as an aid to algorithms are being used. NCETM videos are being used in workshops and in schools to support the teaching of using these resources. ☑Hard Copy video and Web directed resources available for Primary and secondary practitioners Pilot group of leaders building resources to disseminate through their schools.	☑Development of better subject specific resources ☑Uptake of new resources in class rooms as evidenced by Web visits, school sdp(lesson observations, staff meeting)	☑Audit/sample scrutiny of existing subject specific resources being used. Project lead will audit initial pilot schools ☑Launch date of new resources Spring 2015	Independent review of new subject specific resources and old audited resources[iv] ☑Use of new subject specific resources in lessons (through lesson observations or work scrutiny). Usage analysed against performance in observed lessons.

	Outcomes	Indicators	Baseline data collection[i]	Impact data collection[ii]
Pupil outcomes **Sub Groups** The characteristics of the eligible cohort should be analysed across the following sub groups: ☑ LAC continuously for 6 months+ ☑ FSM ☑ FSM at any time during last 6 years* ☑ Disadvantaged pupils ☑ EAL ☑ Gender ☑ Ethnicity ☑ Statement of SEN or supported at School Action Plus ☑ Started respective Key Stage below expected level, at expected level, above expected level All characteristics should be captured as part of establishing the baseline and data should be collected to enable all outcomes to be analysed across these sub groups. **Churn** Throughout the programme thorough records of any "churn" of pupils leaving or joining the intervention group must be kept. In order to do this records must be kept of: ☑ Unique pupil identifier	☑ Increased educational attainment and progress Specifically in closing the gap between FSM and other	☑ Increased attainment (levels and sub levels at KS1-3 in maths. ALL Pupils showing increased attainment against expected school projections SDP ☑ Increased levels of progress (point scores and % achieving higher point scores than expected) ALL Pupils showing increased levels of progress against expected school projections SDP ☑ Reduced gap between attainment of different sub-groups/disadvantaged groups of pupils (e.g. FSM, LAC, by gender etc.) ☑ Focus specifically on FSM and LAC	☑Initial Pilot focusing on classes of the participants themselves. Pilot group Baseline data collected For Sept 2014 baseline data will be collected from all participants schools in summer 2014 Data will show actual attainment of levels for specified children working with the teachers who are attending the workshops. ☑ Intervention group: estimated point score without intervention (for Y1 and Y2 of programme) Pilot group Baseline data collected For Sept 2014 baseline data will be collected from all participants schools in summer 2014 ☑Trend data: in house % points gaps between relative attainment of sub groups for the 3 previous year groups	☑Impact data collection will be actual pupil attainment levels as moderated and specified by schools ☑ Intervention group: difference between actual attainment and expected attainment (without intervention) ☑ Intervention group: in house % points gaps between relative performance of sub groups after Year 1 and 2 of intervention ☑ Performance of sub groups after Year 1 and 2 of intervention

	Outcomes	**Indicators**	**Baseline data collection**[i]	**Impact data collection**[ii]
☑ Engagement date ☑ Disengagement date and reason **Pupil outcomes continued…**	Improved transition between primary and secondary	Higher percentage of pupils outperforming expectations in Year 7 against a comparison group[vi]	Intervention group: assessed levels of primary pupils pre intervention and for 3 years previous Comparison group: assessed levels of primary pupils pre intervention and for 3 years previous Intervention group: expected levels and point scores at end of Year 6 and 7 (without intervention) Comparison group: expected levels and point scores at end of Year 6 and 7 (as above) Trend data: assessed levels of pupils for the 3previous year groups. Comparison group can be the adjacent class to the teacher who is attending the workshop.	Intervention group: assessed levels of pupils at end of Year 6 and end of Year 7[iii] post Y1 and Y2 of intervention Comparison group: assessed levels of pupils at end of Year 6 and end of Year 7 post Y1 and Y2 of intervention A sample of Year 7 assessments should be independently moderated. Waiting to see if secondary schools are going to be involved in year 2.

	Outcomes	Indicators	Baseline data collection[i]	Impact data collection[ii]
School system outcomes	☑ Teachers/ schools **involved in intervention** making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice	☑ Increased attendance at network meetings, conferences etc. ☑Teachers leading CPD ☑Increased number of teachers who are trained to act as Lead partners. PILOT building capacity for lead partners ☑Increased number of teachers who are able to extend network i.e. through 'cascading' training/ support. Pilot Project participants are enabled to lead whole school CPD as backed up by school SDP ☑Increased numbers of schools opting in to participate in networks i.e. attending regular meetings, sessions or events. Project is designed to build capacity and sustainability year on year	☑ Numbers and profile of teachers attending numbers of network meetings, conferences, and taking advanced courses etc. over 12 months previous to the intervention. ☑ ☑Number of trained Lead partners pre intervention ☑Number of staff trained/ able to support & extend networks pre intervention ☑Number of schools actively involved in working together pre intervention	☑ Numbers and profile of teachers attending numbers of network meetings, conferences etc. over Y1 and Y2 of the intervention. I now realise that the collection of data around events will need to be a part of the initial impact collection. Teachers will be asked about the number of staff meetings, INSET and workshops attended. ☑Number of trained Lead partners after Y1 and Y2 of intervention ☑Number of staff trained/ able to support & extend networks after Y1 and Y2 of intervention ☑Number of schools actively involved in working together after Y1 and Y2 of intervention Level of support for online networks/hits etc. Our new website will be able to be accessed by other people and we have ability to check the number of hits.
	☑ Programme activities/ model is embedded in schools planning. Participating schools will have project embedded in SDP **beyond the intervention group**	☑Inclusion of programme activities/ model in development plans Participating schools will have project embedded in SDP	☑Development plan pre roll-out of intervention ☑Commitment/ sign up by school to specific criteria pre intervention Contracts specifically states written in to SDP and half termly staff meetings	☑Part of school/ development plan Number of teachers following development plan/ due to roll out changes ☑Commitment/sign up by school to specific criteria as part of project. Part of SDP half termly staff meetings enabling lead to disseminate over a wider community of schools

	Outcomes	Indicators	Baseline data collection[i]	Impact data collection[ii]
	☑Use of better resources by teachers/ schools **outside the intervention group Long term aim 2016/17**	☑Uptake of new resources developed by LSEF programmes by non LSEF teachers/ schools	☑Planned new resources to be developed by LSEF programmes. Using Primary and secondary schools and NCETM ☑Avenues of dissemination/ promotion Web Presence, Teach Meets, Conference and social media ☑Dissemination dates, on-going from 2014/15 onwards	☑Number of resources downloaded from websites (by different schools)[iv] ☑Number of resources taken from training sessions/ conferences (by different schools) ☑User feedback on quality of resources through online survey

[i] **Baseline data** should be captured just before engagement with the programme intervention. Programmes may therefore simply require one round of baseline data collection at the beginning of the programme. However, where the programme implements a staggered engagement of groups, a baseline will need to be conducted for each group just before they engage with the intervention.
[ii] **Impact data** should be analysed after Y1 and Y2 of the intervention as a minimum.
[iii] **Attrition** (of pupils) must be closely monitored for programmes addressing transition. If a transition programme monitors a cohort from beginning Y6 to end Y7 and some of the cohort leave the intervention group at end Y6 (due to secondary schools not being involved in the programme), these pupils cannot be replaced by new pupils joining Y7 from a primary school not involved in the intervention. Only pupils who have been engaged with the intervention throughout the programme should be analysed.
[iv] **Resources:** It will need to be mandatory for schools/ teachers downloading or taking resources to provide some details before they do so. This will need to be built into any online download options and managed through any other dissemination avenues i.e. at conferences.

Completing the impact framework: questions to consider:

1. Does the *impact focus* identify a group of pupils within the class and a specific area of focus for improving their learning?
   Is the *impact focus* specific so that impact can be described in detail?

The difference I want to make for my pupils is to use their skills to understand what they read and therefore enjoy and attain more. → The difference I want to make for my pupils is to improve the least able boys' inference and deduction skills so that they can access more complex texts at an age-appropriate interest level.

2. Does the framework describe teaching and learning in your own classroom?

Teachers differentiate for the least able using additional adults in around 80% of lessons. → Planning scrutinies show that I plan for myself or the TA to support the least able for 80% of the time.

3. Does it tell me what I will actually see you and your pupils doing / hear you saying if I came into your classroom?

Lessons are reactive to children's responses to questions and assessment. → Lesson observations show that I stop the children for mini-plenaries after ten minutes of learning time to ask them questions about their learning and may then change the lesson focus if misconceptions are identified or it becomes clear they can do the work successfully.

4. Does it describe how you and your pupils are feeling during lessons?

I never sit with a group for more than 10 minutes because the low ability children keep raising their hands for help. → I feel I need to respond to raised hands from the low ability children and this means I do not support my focus group to make sufficient progress.

5. Is it about the *Impact focus* or about your teaching more broadly?
   Does it describe the focus group of children instead of the whole class?

Children struggle to articulate their thinking. → Lesson observations show that my more able children will often say *I just knew it* or *I worked it out in my head* instead of being able to explain their thought process when solving a maths problem.

6. Is it specific (eg *once a week, 80% of maths lessons, 5 out of 6 children, etc)* or does it use vague words (eg *some, most, regularly, often, might*)?

Most children struggle to stay engaged and on-task during lessons. → Lesson observations show that around 30% of the children drift into off-task talk after about 10 minutes of work time and around 4 or 5 children in any given lesson will get up and wander around the room. This means work outputs are too low for around 70% of the class.

7. Does it give evidence or examples of teaching practice and pupils' experiences?

I teach the children skills and then they apply them in their own writing. → I teach the children a skill and then ask them to apply it in their own writing. For example, I teach them how to add a prepositional clause and then set a success criteria of using at least two in their writing in that lesson.

8. Does it talk about what *is* and what *will* happen, instead of what *isn't* happening or *won't* happen?

Children don't apply their mental maths skills to problem solving tasks. → Work scrutinies show that when working on problem solving tasks, children resort to paper and pencil methods for calculations, which slows down their pace of work and means they often only get 60% of the way through the problem.

9. Does it tell me how you know eg through work scrutinies, pupil interviews, lesson observations?

The target group will use more additional clauses to add descriptive detail to their work when they are working independently from the teacher → Work scrutinies will show that the target group use more additional clauses to add descriptive detail to their work when they are working independently from the teacher

10. Are children's names correctly coded (ie two letter school code, numerical teacher code, pupil letter)?
    Have you considered whether qualitative data might evidence impact eg questionnaires, interviews?
    Does the pupil data consider both attainment and progress?

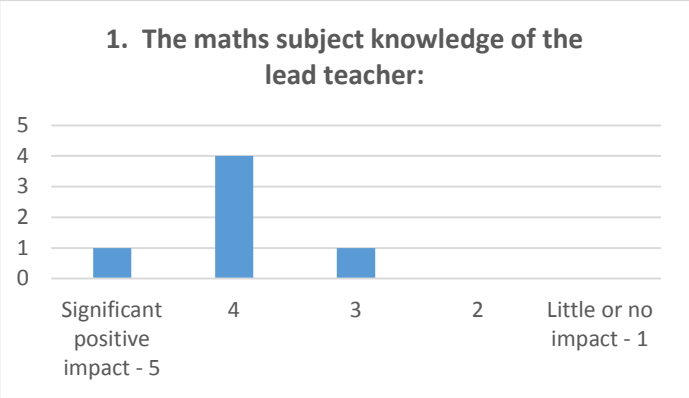
Suggested format for individual schools to use for school development plan			
Actions	Lead	Timescale	Resources
School participating in large scale Research and Development project: raising achievement in maths	ETAL	initial 1 year	
Maths leader attends half termly training specifically on: Subject knowledge How to evidence impact of teaching and learning Awareness of subject specific teaching methods Use of better subject-specific resources.	ETAL with maths leader	Half termly over 1 year	Half termly PD from ETAL
Teachers/schools to participate in networks i.e. attending regular meetings, sessions or events, to improve subject knowledge and teaching practice. Participation will build capacity and sustainability year on year.	Maths lead	Half termly over 1 year	Website from ETAL
Participants will lead CPD sessions at least once per term around maths subject knowledge and/or subject specific teaching methods.	Maths lead Support from ETAL	Once a term over 1 year	Package from ETAL
Maths leaders to disseminate roll out of programme of curriculum change.	Maths lead	1 year	
Maths lead participates in an impact evaluation lesson study in their class: is coached to evaluate learning and evidence impact	Maths lead	1 year initial	Supported by Institute of Education through ETAL
Calculation policy is reworked/rewritten	Maths lead	1 year	
Subscribe to iris scheme: teachers are able to use video capture technology to capture parts of their teaching and learning.	ETAL and lead from school	1 year initial	ETAL
Lead teacher takes part in a coaching programme to explore models for supporting and developing teacher practice.	Lead coach	1 year initial	ETAL

Appendix 3: analysis of impact through online questionnaires

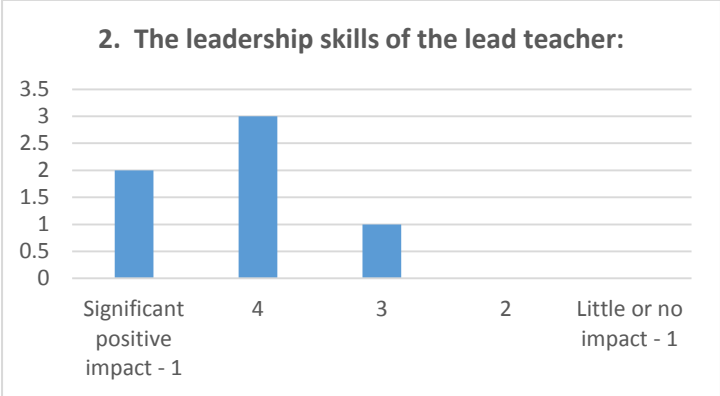
Headteacher questionnaire

Responses from six headteachers (from a possible 13)

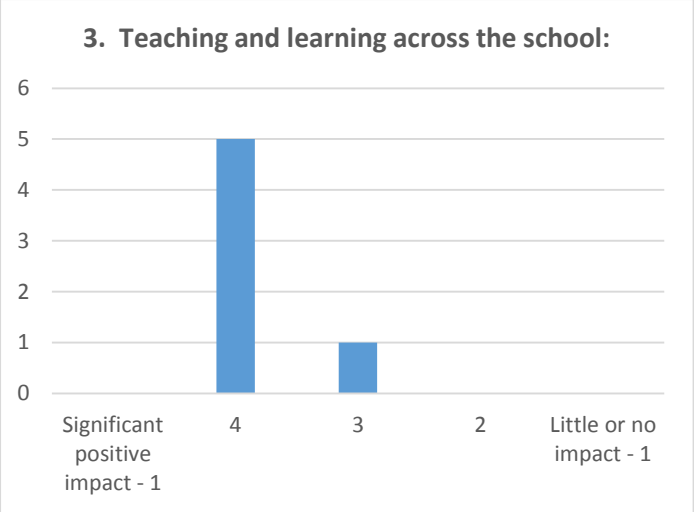
A. To what degree has The Raising Achievement in Maths project had an impact on:



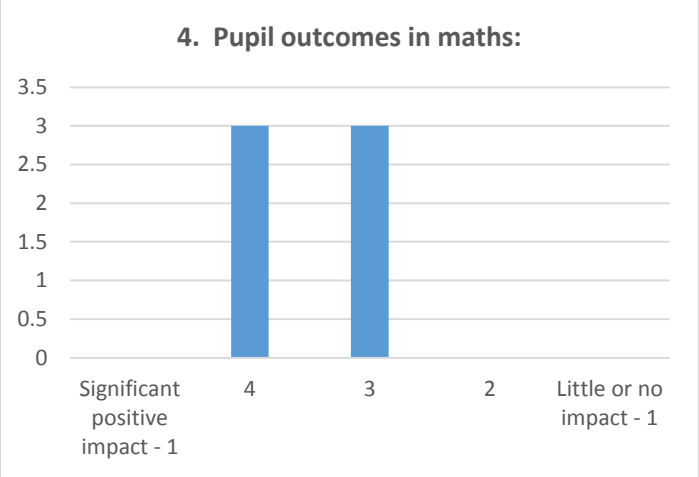
	Number	%
1 Little/no impact	0	0%
2	0	0%
3	1	16.7%
4	4	66.7%
5 Significant positive impact	1	16.7%



	Number	%
1 Little/no impact	0	0%
2	0	0%
3	1	16.7%
4	3	50%
5 Significant positive impact	2	33.3%



	Number	%
1 Little/no impact	0	0%
2	0	0%
3	1	16.7%
4	5	83.3%
5 Significant positive impact	0	0%



	Number	%
1 - Little/no impact	0	0%
2	0	0%
3	3	50%
4	3	50%
5 - Significant positive impact	0	0%

Comments in relation to scores given:

Has been particularly effective in developing a new subject leader.
The lead teacher has been extremely enthused by all of the sessions and has enjoyed refining their subject knowledge in order to lead and develop the subject knowledge of all staff.
The project has supported the development of a new leader of maths, particularly enabling the maths leader to lead on staff development.
Cannot as yet evaluate the pupil outcomes but there is certainly a sense of enthusiasm in numeracy lessons. Subject leader has led a number of training sessions which have been well received and acted on. Certainly developed the subject leaders' leadership skills as he has been promoted to another school.
I feel the [lead teacher] has become much more of a team player. She has led INSET and a parent workshop.
Not evident in maths results yet.

2. If this project ran again would your school be interested in participating?

No	0	0%
Yes - Partly	2	33.3%
Yes - Fully	4	66.7%

Comments justifying decision:

Fully-

- *Our subject leader was always full of enthusiasm and eager to share the course information, run INSETs, team teach and raise the profile of Maths -he is leaving and I would want the level of interest and the new ideas and concepts to continue.*
- *I think the course has been very valuable particularly at this time of National Curriculum change. I still feel not everyone has come to grips with the higher bar of the new curriculum and this course is perfect for that. Also my candidate this year has now decided to leave so that knowledge goes with her.*
- *I feel it's incredibly beneficial to continue to discuss and evaluate the teaching of maths. The development of methods such as the bar model for example, highlight the importance of continuing to progress our teaching.*
- *It has been beneficial in supporting succession planning.*

Partly –

- *Finding cover for two teachers to be out can be difficult.*
- *It would need to be something at a higher level - not a repeat.*

Lead teacher questionnaire

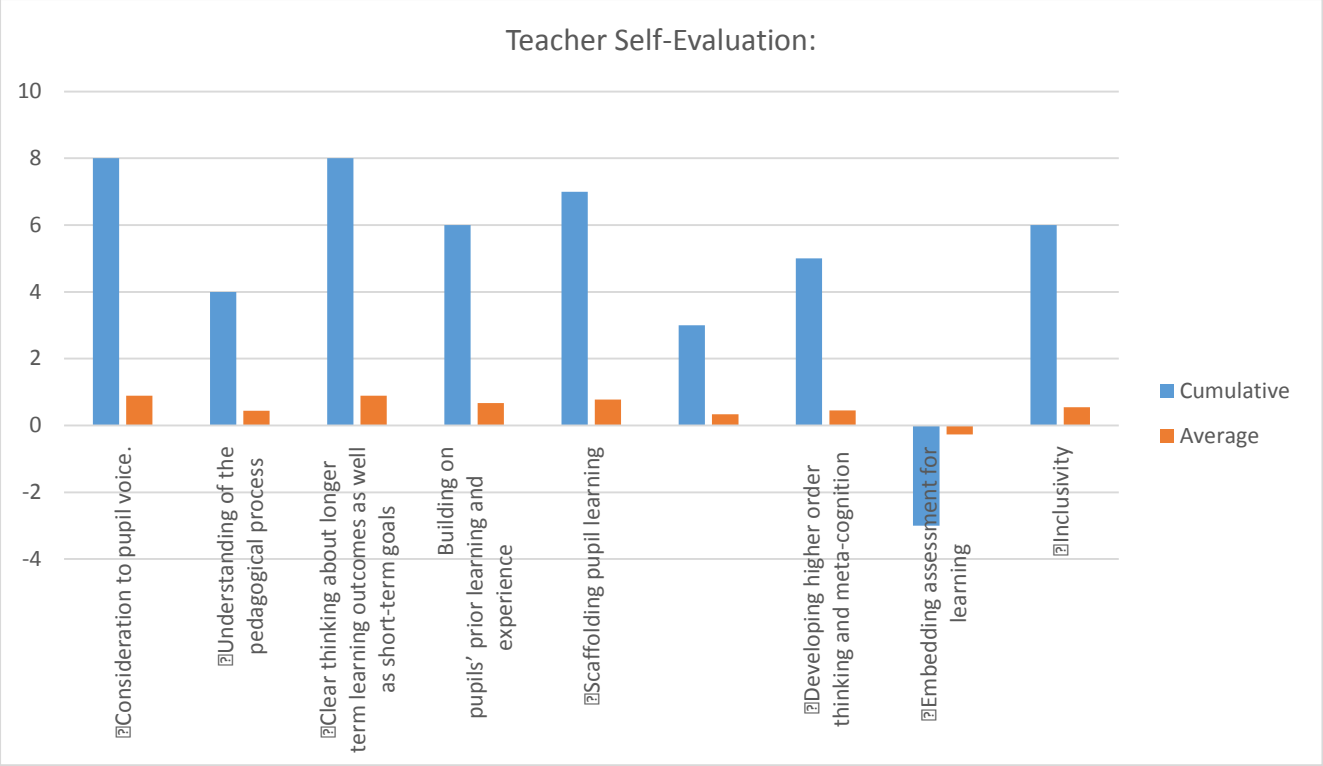
A) Self-assessment rating before and after intervention

The questionnaire was based on *What makes effective pedagogy? Nine claims from research*[1] from the National College for Teaching and School Leadership. Participants were asked to rate themselves on a seven point scale (1 being low confidence and 7 being high) against nine aspects as below:

1) **Consideration to pupil voice.** *How well do you consult pupils, engage them in decisions about the teaching and learning process and respond to their feedback?*
2) **Understanding of the pedagogical process** *How well do you understand the link in effective pedagogy, between subject-matter knowledge, teaching processes and knowledge (and beliefs) about children and their development?*
3) **Clear thinking about longer term learning outcomes as well as short-term goals** *How well do your individual lessons fit to a longer-term sequence of learning outcomes?*
4) **Building on pupils' prior learning and experience** *How well do you lead learning from the pupils' current developmental level to a higher level of potential development?*
5) **Scaffolding pupil learning** *How well do you support developmental changes in learners, including social and emotional support and fostering motivation?*
6) **Using a range of techniques, including whole-class and structured group work, guided learning and individual activity** *How good are you at planning, organising and implementing a range of effective teaching approaches in order to advance pupil learning?*
7) **Developing higher order thinking and meta-cognition (pupil's awareness of their own thought process)** *Do you make good use of dialogue and questioning in order to advance students' understanding of their learning processes?*
8) **Embedding assessment for learning** *Do you use student achievement to inform next steps in instruction? Do you help students to be self-regulating and work to own goals rather than by comparing to others?*
9) **Inclusivity** *How well do you take into account the needs of a diverse range of students; encouraging all students to achieve equally highly; and avoid crude categories and stereotypes?*

There were nine matched sets of data from 13 participants in total.

[1] Husbands, C. and Pearce, J. (2012) *What makes effective pedagogy? Nine claims from research* National College for Teaching and School Leadership



As with any self-confidence audit, outcomes are reliant upon self-assessment, meaning that it may only be after the professional development and the re-auditing that teachers realise what they 'don't know'. This seems to have been the case for this project and has led to a skew in audit measurements which is clear from text responses (see E below), which are extremely positive about the impact of the project. Across the entire audit, there were ten negative scores. Four of these were under aspect nine: *Embedding assessment for learning*. All other scores under this heading were zero.

(NB The data for an additional two lead teachers was included for the following questions where matching was not required.)

B) Which of the above aspects do you think you have developed the most through your involvement in the project?

Aspect	Nos	%
Consideration to pupil voice	0	0%
Understanding of the pedagogical process	5	45.5%
Clear thinking about longer term outcomes as well as short term goals	1	9.1%
Building on pupils' prior learning and experience	0	0%
Scaffolding pupil learning	1	9.1%
Using a range of techniques, including whole-class and structured groupwork, guided learning and individual activity	4	36.4%
Developing higher order thinking and meta-cognition	0	0%
Embedding assessment for learning	0	0%
Inclusivity	0	0%

C) To what degree has this project had a positive impact on your leadership of maths?

	Your development as a Maths specialist		The development of my leadership skills	
1 - Little/no impact	0	0%	1	9.1%
2	0	0%	0	0%
3 - Reasonable impact	3	27.3%	4	36.4%
4	8	72.7%	5	45.5%
5 - Significant positive impact	0	0%	1	9.1%

D) How confident do you now feel as a leader of maths in your school?

Not at all confident: 1	0	0%
2	1	9.1%
3	4	36.4%
4	4	36.4%
Extremely confident: 5	2	18.2%

E) Comments by teachers

Teachers were asked to comment on:

- the aspect of their practice on which the project had had the greatest impact (see B above);
- the impact of the project on pupil learning;
- the impact of the project on their confidence as a current or future maths leader;
- the aspects of the project that had particularly strong impact.

The following themes were most frequently identified (in rank order, most common to least):

- Impact on pupil confidence and/or progress and attainment (8 out of 11):
  - ✓ *All pupils are making good progress with some making outstanding progress. All children are also increasingly confident and enjoy maths.*
  - ✓ *Children are making good progress and many children who were below age related expectations are now meeting them.*
  - ✓ *I think it has accelerated progress, particularly for the focus children as they have had specific and targeted intervention from myself and other adults which has helped them to become more confident and independent learners.*
- Deeper subject knowledge including understanding of progression in maths and how children learn at different ages/stages (7 out of 11):
  - ✓ *I have learnt more about progression in mathematical concepts and suitable resources to use for each step. I feel confident in explaining 'mastery' and the progression children make in maths from Early Years.*
  - ✓ *It has helped me understand the progression needed from Reception to year 6 and how to deepen children's understanding.*

- Improved leadership skills and/or confidence (7 out of 11):
    - ✓ *The project has given me the confidence to lead maths in my school. I have also become more familiar with the coaching model, and am using this more consistently in school now with colleagues and with students.*
    - ✓ *I feel more confident as a Maths teacher and have been able to share good practice with colleagues (and a result this has developed my leadership skills).*
- Developed new/better pedagogical strategies for maths (6 out of 11):
    - ✓ *[I am now] using effective models and images to support the development of children's concepts, including use of resources such as base 10, or place value counters; and pictorial methods such as the 'bar method'.*
    - ✓ *[I now] complete shorter whole class activities and focus more on small group work, place greater emphasis on effective choice of strategies/manipulatives to solve problems, provide clearer success criteria, model and provide scaffolds for children to children to explain their thinking.*

Other themes mentioned by three or less included:

- Better access to and knowledge of resources for teaching and professional development:
    - ✓ *I was grateful for the material that we were given in terms of PowerPoint presentations that I could share with staff at staff meetings etc.*
- Impact on school policy:
    - ✓ *I am writing a calculation policy from scratch (I am part way through doing this and found the discussions and scrutiny of other schools' policies as part of the project very useful for this purpose). I am also auditing maths resources (again, looking at a wide range of resources as part of the project has given me some ideas).*
- Better able to support other teachers: practice and confidence:
    - ✓ *It has helped me broaden my knowledge and understanding and helped others in my school to develop their practise through the ideas and strategies I am now able to show them.*
- Better able to personalise / support particular pupil needs in maths:
    - ✓ *It has also helped me to change my approach to supporting the lower attainers in my class, with them now receiving much more whole class teaching, rather than being withdrawn to work at a lower level, predominantly being led by a TA.*
- Better knowledge of new NC and current approaches to maths teaching:
    - ✓ *I am more informed about the new curriculum, the concept of 'maths mastery', best practice in teaching across all areas of maths and what 'good Maths teaching' looks like.*

The processes of the project that teachers highlighted as making a significant contribution to those impact listed above were: time to reflect on their own practice (3 out of 11); opportunities to work alongside practitioners from other schools (6 out of 11), being given tasks and resources to use in their own school setting (3 out of 11):

- *Having time out of class to do some quality thinking and discussion time with colleagues from schools across the borough enabled us to share best practise and to problem solve issues together in a supportive environment.*

Coached teacher questionnaire

Responses from two teachers who were coached by a lead teacher (from a possible 13).

A) What difference has working with the lead teacher made to your practice?

	Little or no difference : 1	2	3	4	Significant difference : 5
1) Consideration to pupil voice.			1		1
2) Understanding of the pedagogical process				1	1
3) Clear thinking about longer term learning outcomes as well as short-term goals			1	1	
4) Building on pupils' prior learning and experience				2	
5) Scaffolding pupil learning		1			1
6) Using a range of techniques, including whole-class and structured group work, guided learning and individual activity			1		1
7) Developing higher order thinking and meta-cognition			1		1
8) Embedding assessment for learning			1	1	
9) Inclusivity			1		1

B) What has been most helpful in terms of support you received from the lead teacher?

To consider how to support all learners; especially with the use of resources. I have a clearer understanding of the new curriculum and 'mastery'.
Marking and feedback in the school has become more straightforward and accessible for the children. It has made a significant impact during lesson and enables the children to access the learning however it has not as yet helped them to retain the knowledge or concepts over time.

C) What more could the lead teacher have done to support you with your Maths teaching?

To observe and then offer next steps. We attempted to schedule time for this however we were unable to make this happen due to a lack of cover within the school.
More information about new assessment methods for the new curriculum.

D) Is there anything else you would like to tell us about working with a lead teacher?

She was extremely help and approachable. She also contributed ideas without being asked which is fantastic. Considering other members of staff who could be less willing to make the

first step in seeking advice [the lead teacher's] proactive approach will increase the chance of them receiving the support they require.

General conclusions:

Headteachers feel the project has had a positive impact on the maths subject knowledge and the leadership skills of the participants and that this has had an impact both on teaching and learning and pupil outcomes. Some indicated that although the impact of the project on pupil outcomes was not yet visible, it would emerge in the future.

All headteachers would want to participate in the project if it continued. The only reservations they had around future participation were to do with difficulties in funding supply cover and the need for a future programme to not repeat this year's content.

Before and after self-confidence scores revealed low impact but lead teacher comments highlighted considerable positive impact. It is likely that this is due to teachers realising what they 'don't know' through the programme (especially for confidence in embedding Assessment for Learning techniques). Teacher comments highlighted strong impact on:

- pupil confidence, attainment and progress;
- teacher subject knowledge, understanding of progression and best practice in pedagogy for maths;
- improved leadership skills and confidence.

Opportunities to reflect on their own practice, time for collaboration with colleagues and tasks/resources to use in their own schools were valued aspects of the programme.

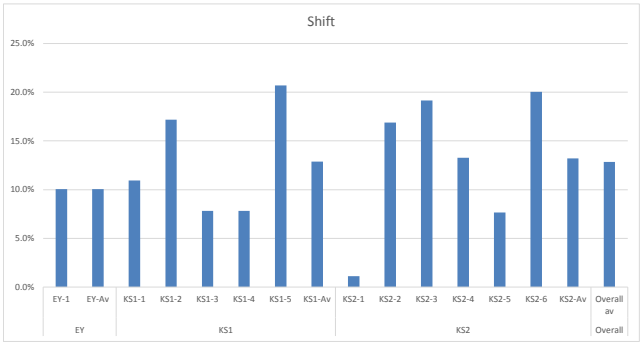
Although there were only two responses to the coached teacher questionnaire, those who did respond highlighted positive impact on several aspects of their classroom practice.

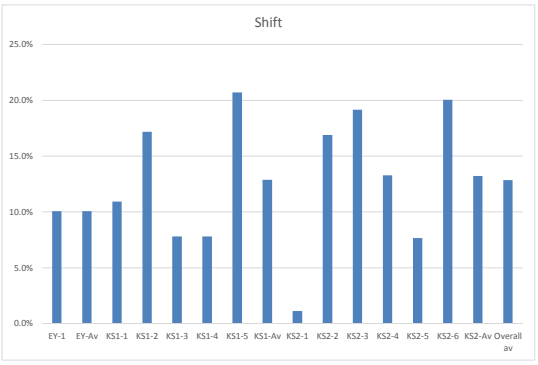
Issues to consider to support future sustainability:

- Ensure the programme retains its focus on the development of subject knowledge, progression and pedagogy in maths;
- Ensure any future programme builds in opportunities for teachers to reflect on their own practice, time for collaboration with colleagues and tasks/resources to use in their own schools;
- Gather more evidence of impact on coached teachers to understand the broader picture around impact of the lead teachers' professional development;
- Ensure any future programme can meet the needs of new lead teachers and those wishing to develop their practice further.

		Shift
EY	EY-1	10.1%
	EY-Av	10.1%
KS1	KS1-1	10.9%
	KS1-2	17.2%
	KS1-3	7.8%
	KS1-4	7.8%
	KS1-5	20.7%
	KS1-Av	12.9%
KS2	KS2-1	1.1%
	KS2-2	16.9%
	KS2-3	19.1%
	KS2-4	13.3%
	KS2-5	7.7%
	KS2-6	20.0%
	KS2-Av	13.2%
Overall	Overall av	13%

1.1%
7.7%
7.8%
7.8%
10.1%
10.9% Median
13.3%
16.9%
17.2%
19.1%
20.7%





Teacher	Pupil	Feb-14	APS	Jul-14	APS	Progress	Av progress by teacher
JM	IA	2B	15	2a	17	2	
	SCM	3C	19	3c	19	0	
	TN	3B	21	3b	21	0	
	AC	3C	19	3c	19	0	
	RP	3A	23	3b	21	-2	
	KV	4C	25	4b	27	2	0.3
LD	AS	2C	13	2A	17	4	
	FR	2B	15	2A	17	2	
	RP	2B	15	2C	13	-2	
	RO	2B	15	3c	19	4	2
SA	RM	2B	15	3C	19	4	
	SAW	2A	17	3B	21	4	
	HB	2A	17	3B	21	4	
	SS	2A	17	3B	21	4	4
EC	AB	2C	13	2A	17	4	
	SR	2B	15	3C	19	4	
	ST	2B	15	3C	19	4	
	FM	2C	13	2A	17	4	
	SaTH	2B	15	3C	19	4	4
SD	H AG	3b	21	3a	23	2	
	OM	3c	19	3a	23	4	
	RM	3c	19	3a	23	4	
	KW	3c	19	3a	23	4	3.5
MR	GA	2a	17	3c	19	2	
	CB	3b	21	3a	23	2	
	NS	3c	19	3a	23	4	
	TW	3a	23	4b	27	4	3
							2.7

In any given year, national expected progress would be 3 points.
As high performing schools, we would look for 4 points progress in any given year.
From February to July, expected national progress might be 6/9ths of 3 ie 1 point and we would expect 1.3 points.
All teachers bar one have therefore made more than national and local expected progress for their cohort and many have more than doubled this rate.

Teacher	School	Yr grp	Pupil	01/09/2014 A	01/07/201	APS Progr	Av pro by tchr
JJ	1	3	TA	17	23	6	5.5
			TC	17	21	4	
			SH	17	23	6	
			EO	17	23	6	
MW	2	3	LH	13	19	6	6
			DT	13	19	6	
			SD	13	19	6	
			RL	13	19	6	
			EL	13	19	6	
			MT	13	19	6	
NH	3	2	CL	11	15	4	4.3
			AA	11	15	4	
			TH	11	15	4	
			JLT	11	15	4	
			AD	9	15	6	
			ZO	11	15	4	
AMP	5	6	GB	21	31	10	5.3
		6	AS	23	27	4	
		6	AK	19	23	4	
		6	MN	21	27	6	
		6	SM	23	27	4	
		6	JM	21	25	4	
RW	8	1	TB	5	13	8	7.5
			GB	5	13	8	
			AS	5	13	8	
			BU	5	11	6	
AS	9	2	TA	23	29	6	5.3
			YB	19	25	6	
			MB	19	25	6	
			EB	25	29	4	
			RB	23	29	6	
			SC	21	25	4	
AM	10	6	NH	25	29	4	4.3
			CL	25	29	4	
			SMS	25	29	4	
			GR	27	31	4	
			KA	23	29	6	
			BA	27	31	4	
NM	11	1	NB	3	11	8	8
			SA	3	11	8	
			AG	3	11	8	
			MS	3	11	8	
			KW	3	11	8	
			ME	3	11	8	
GAC	12	4	AG	19	25	6	6
			DK	19	23	6	
			ZG	17	23	6	
			CD	17	23	6	

			EG	17	23	6	
				747	1027	282	5.2

Summary		4.3
T1	5.5	4.3
T2	6	5.3
T3	4.3	5.3
T4	5.3	5.5
T5	7.5	6.0
T6	5.3	6.0
T7	4.3	7.5
T8	8	8.0
T9	6	
Mean	5.2	
Median	5.5