London Schools Excellence Fund

Self-Evaluation Toolkit

Final report

Contact Details
educationprogramme@london.gov.uk

Evaluation Final Report Template

Introduction

The London Schools Excellence Fund (LSEF) is based on the hypothesis that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration. The GLA is supporting London schools to continue to be the best in the country, with the best teachers and securing the best results for young Londoners. The evaluation will gather information on the impact of the Fund on teachers, students and the wider system.

This report is designed for you to demonstrate the impact of your project on teachers, pupils and the wider school system and reflect on lessons learnt. It allows you to highlight the strengths and weaknesses of your project methodology and could be used to secure future funding to sustain the project from other sources. All final reports will feed into the programme wide meta-evaluation of the LSEF being undertaken by SQW. Please read in conjunction with Project Oracle's **'Guidance to completing the Evaluation Final Report'**.

Project Oracle: Level 2
Report Submission Deadline: Round 1 and Round 2 - 30 September 2015 *(delete as appropriate)*
Report Submission: Final Report to the GLA / Rocket Science *(delete as appropriate)*

Project Name: PLASMA-T: Putting London Ahead through Science, Mathematics and Technology

Lead Delivery Organisation: St Olave's Grammar School
London Schools Excellence Fund Reference: LSEFR1169
Author of the Self-Evaluation: David Budds
Total LSEF grant funding for project: £300,800
Total Lifetime cost of the project (inc. match funding): £ 401, 501.80
Actual Project Start Date: 1st January 2014
Actual Project End Date: 30th September 2015 (although certain legacy initiatives are projected to continue running for the foreseeable future)

1. Executive Summary

This should be a brief summary of what information is included in the report, the evaluation methods and analysis used and a summary of the key findings from your project evaluation. (maximum 500 words)

The final evaluation report contains far more data than we were able to provide in the Interim Report. That said, some data has still proved impossible for us to collect and include. The main evaluation method has remained questionnaires which have for Year Two been more carefully refined to reflect the need for specific data on confidence and knowledge gain which were our two main target outcomes.

Summary of Areas of Greatest Impact
The greatest gains in confidence and knowledge identified were in the following areas, and this is why most of these will remain a focus of our offering in the legacy period (see below):

- Primary computing (pupils and teachers)
- Medical application support (pupils)
- Secondary Maths (teachers)
- Primary robotics (pupils)
- Secondary computing (teachers – large impact but a small number of beneficiaries)

Secondary Partners: Engagement and Impact
The tendency towards insularity noted in last October's interim report, particularly in secondary schools, remained hard to combat in terms of engaging partner schools with the project, especially in terms of the science strand; that said we were able to sustain and develop momentum with our established partners and to engage with a larger number of colleagues in the secondary sector in the second year of the project (particularly in Maths) than we were in the first. The impact on confidence and knowledge of secondary school teachers in Computing has been considerable for those who attended our CPD events throughout the year, although the number of regular attendees remained frustratingly small, despite extensive marketing of this series of courses.

Primary Partners: Engagement and Impact
It remained the case that the insularity was less pronounced in work with primary partners with whom a more aspirational, progressive working relationship proved easier to cultivate and a great deal of fruitful work was undertaken in Year Two both working directly with primary pupils and with colleagues in the primary sector; we were also able to extend the compass of the project from our immediate locality into working with a consortium of schools in the Sevenoaks area also. Materials produced for the project have been more widely disseminated and used (particularly the primary computing resources, curriculum maps and schemes of work). Events for colleagues to engage with were more tailored in Year Two to suit demand and this has redressed to some extent the issue of engagement.
In terms of impact demonstrated, the greatest impact identified so far has been in terms of benefit to the confidence and knowledge of teachers and pupils in the primary sector with specific reference to the Computing strand. This has coincided with the area of greatest perceived need as a result of curriculum change.

Ongoing Activities in the Legacy Period
It is anticipated that we will be able to continue a range of legacy initiatives, particularly in respect of computing, robotics and mathematics. The Outstanding Teacher Programme (OTP) will also continue to be an initiative which St Olave's runs, and several of the medical and Oxbridge initiatives will continue to run annually. The PLASMA-T portal with its wealth of specialised resources will remain open and accessible to primary and secondary partners to continue creating impact and adding benefit in the legacy period.

2. Project Description

Much of the detail for this section can be drawn from your Stage 2 funding application. Please note that if you do copy this information from your original application, funding agreement, or interim report, be sure to update it as appropriate (e.g. including tense change).

Provide a full project description (approximately one side of A4), in particular:

- *Why was the project set up? / What need was it seeking to address? (e.g. because teachers lacked confidence in their subject knowledge? Because pupil attainment was lower in this subject area in this borough/cluster/school/than in other boroughs/clusters/schools?).*

The PLASMA-T project has sought to spread robust subject knowledge, good practice and confidence amongst colleagues at primary and secondary levels in STEM subjects and to develop pupil aspirations and attainment in this area, both by working directly with pupils in partner schools and by developing the subject knowledge and confidence of other teachers. It has also sought explicitly to promote and support fulfilment of higher education aspirations for pupils aiming to study STEM subjects at some of the most prestigious providers in the country.

- *What were the circumstances into which it was introduced (e.g. existing networks of schools/ expert partner offering a new approach etc.)?*

Whilst we had 16 partners in the original application who had expressed an interest in participating in project events, in practice much of the most fruitful work undertaken on the project was with partnerships which we established through direct contact and marketing after the project had started. There was no real existing network of schools in place at the outset, but many local primaries whose pupils might aspire to a place at St Olave's proved very willing to engage at the outset and remain as key partners throughout the term of the project; this partnership with local primaries will continue into the legacy period. With secondary schools we have developed some close partnerships through the project with partner schools wishing for support in the Computing curriculum. Through such partnerships we were also able to get more pupils on board for some of our outreach events in other areas (such as Oxbridge, Harvard and Medics' outreach events). The biggest pre-existing network which we were able to benefit from was the Further Maths Network and through working closely with them, we were able to engage with a very wide range of partner schools in the secondary sector (over 40) over the course of the project. It is hoped that these partnerships can be sustained and developed through our application to become a Maths hub.

The project has been predicated upon the sharing of our expertise and resource in a range of specialised curricular areas such as Maths, Robotics, Science and Oxbridge and Medical applications. Sharing of our well-developed systems and resources for supporting applications for medical degrees and supporting applications for Oxbridge will continue through a subsequent initiative called the SCHOLA project which will run over the next three years. The network for this initiative will be the Woodard Group of schools which includes a wide range of schools of differing types all over the country.

- *What project activities have been put in place?*

The systems and resources referred to above have been shared with partner schools through an online resource sharing platform and a range of different outreach events and these events (including differentiated workshops for KS4 and KS5 pupils aspiring to study medicine co-run with Imperial College, London) will continue into the legacy period. Examples of further specific areas and events on which the project has delivered also include a range of colleague CPD events in Maths and Computing: The school is one of the strongest achievers nationally in Mathematics and Further Mathematics and remains well positioned to share expertise in this area and we are anticipating that we will be able to sustain – and develop – the range and compass of these events through an application to become a Maths hub school. The school has pre-empted broader curricular change by focussing on Computing rather than ICT in recent years, and had amassed expertise and resources which have been of benefit to partner schools facing a mandatory shift in emphasis away from use of applications software and towards the more challenging core skills of programming and computational thinking. To this end we have run a range of secondary workshops designed to support colleagues trained primarily in ICT to develop their skills and confidence in computational thinking. We have also offered extensive CPD and curriculum modelling to primary colleagues who were having to come to terms with a new primary Computing curriculum and undertook extensive outreach work directly with primary pupils in a range of events both within St Olave's and in the beneficiary schools themselves. The school has a wealth of experience in applying programming skills into practical robotic applications through delivery of the VEX robotics programme in Design Technology and has been a prominent hub for promoting achievement in this area in recent years; this expertise has been shared with partner schools in the primary sector through provision of robotics kits funded by the project and training in their use which will continue into the legacy period. We have also set ourselves up as a hub preparing primary pupils for robotics competition and our summer robotics festival will remain an annual fixture of the legacy period. Pedagogic skills have been promoted via the sharing of the Outstanding Teacher Programme (for which St. Olave's is an accredited facilitator) with colleagues in partner schools, although uptake on this strand was frustratingly small. Broadly speaking, the project has sought to deliver enhanced subject knowledge and confidence in teachers at partner schools through a range of inset and CPD events (increasingly demand-driven in Year 2 and tailored to the specified needs of partner schools) as well as through development of a legacy culture of online resource sharing via the PLASMA-T portal. It is anticipated that two key legacy benefits of the project will be the maintenance of a self-sustaining culture of peer-to-peer hubs in STEM subject areas and an enduring communal online resource hub which partners will have access to beyond the term of the funding. The project has also sought to enhance pupil outcomes and aspirations more directly through outreach work with primary and secondary pupils from partner schools in a range of events.

- *Where has the project been delivered geographically?*

The main focus of the project in terms of primary partners has been within the borough of Bromley, focusing particularly on work with partner schools in areas of comparative social deprivation. The geographic range of engagement with secondary partners has been far broader. Work has been conducted with colleagues and pupils not only in Bromley, but in boroughs including Croydon, Bexley and Haringey. Whilst the primary focus remains the capital, through using wider connections gleaned through work with the Further Maths Network, we have developed partnerships and shared resources and expertise with schools beyond the boundaries of the capital, moving southwards into Kent and north as far as Norfolk in one case.

- *Who delivered the project?*

In Year 2 the project has been delivered almost exclusively by full time and part time members of the staff of St. Olave's. We did buy in some additional external courses (particularly for primary

computing partners) to get the ball rolling in Year 1 before staff appointments for Year 2 came into effect.

- *Who were the target beneficiary groups of the project and why?*

Teachers of STEM subjects in state secondary schools and all state primary colleagues who have to teach aspects of STEM (which is to say, virtually all state primary colleagues). Pupils in state secondary and primary schools with aspirations (identified either by themselves or by their teachers) to improve their subject knowledge, confidence and level of attainment in STEM subjects.

How were partner schools selected?

In the case of primary partners, the dominant criteria were geographic proximity and social deprivation. The schools with which we worked most closely and consistently (both in terms of pupils and staff) were all within a radius of three miles, and those with which we had the greatest degree of contact were those who operated within areas of relative social deprivation within the borough (e.g. St Paul's Cray and St Mary's Cray). Such partner schools were willing to be engaged and valued virtually all support opportunities through PLASMA-T with which they were presented. These are also the schools with which we continue to work most closely during the legacy period.

In the case of secondary schools, whilst we had intended originally to operate mostly on the basis of geographical proximity (and this was the case for certain strands of the project, such as Medics' prep and STEP/MAT etc), for many of the teacher-focused initiatives we were obliged to cast our nets wider as there was less interest locally. Hence for example for Maths CPD we were able, using the FMSP network, to successfully market our events to a far broader audience geographically. For Computing CPD at secondary level, we conducted widespread marketing within and beyond the borough by email and by phone to attempt to encourage engagement. Some of those who were the most regular beneficiaries of were from outside of the borough (e.g. delegates from Erith), but many were, as with primary schools, from local partner schools from the comprehensive sector such as Coopers and Charles Darwin.

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

If **Yes**, what does it address?

The project has worked extensively with primary partners on the KS2 Computing curriculum and (to a lesser extent numerically although no less beneficially) with secondary partners on the KS3, 4 and 5 curriculum. It has sought to address two key issues in this respect:

- the skills gap for primary colleagues without a computing specialism who find themselves suddenly obliged to teach algorithms, programming and computational thinking (particularly an issue for these colleagues as the priority in their PPA is planning and preparing to deliver on the new requirements for literacy and numeracy) + also for secondary colleagues who formerly specialised in ICT but find themselves needing to teach new Computing specifications.

- The skills gap for pupils who are assumed to have undertaken prior learning which has not already happened owing to the fact that the new Computing curriculum has only just been put in place (e.g. working with KS2 pupils who have not accessed the KS1 curriculum for Computing and bringing them up to speed so that they do not suffer in their ability to access later learning)

2.2 Please list any materials produced and/or web links and state where the materials can be found. Projects should promote and share resources and include them on the LondonEd website.

plasma-t.saintolaves.net (no www required, in fact it won't work if you add www)
A full range of resources for Maths, Computing and Oxbridge strands of the project can be found at the above web address.

3. Theory of Change and Evaluation Methodology

Please attach a copy of your validated Theory of Change and Evaluation Framework.

Throughout the report it would be useful if you make reference to these documents. Where appropriate we would also encourage you to include any assumptions you have made from previous research.

3.1 Please list **all** outcomes from your evaluation framework in Table 1. If you have made any changes to your intended outcomes after your Theory of Change was validated please include revised outcomes and the reason for change.

The below table lists the core outcomes across all strands put forward in the evaluation framework; the evaluation framework originally had each strand broken down by sub-outcomes relating to different strands, each of which feeds into one of the overall target outcomes listed below (see separate attachment for original evaluation framework). The core outcomes have not changed at any point, but the below is a change in so far as it represents a consolidation of all the smaller individual outcomes into overarching aims. As discussed with Project Oracle in October 2014.

Table 1- Outcomes

Description	Original Target Outcomes	Revised Target Outcomes	Reason for change
Teacher Outcome 1	Enhanced levels of confidence in STEM subjects		
Teacher Outcome 2	Enhanced levels of knowledge/subject-specific pedagogy in STEM subjects		
Teacher Outcome 3			
Pupil outcome 1	Enhanced levels of confidence/enthusiasm in STEM subjects		
Pupil outcome 2	Enhanced levels of knowledge/attainment in STEM subjects		
Pupil outcome 3	Increased level of uptake in STEM subjects		
Wider system outcome 1	Partner schools commit to participating in sustainable networks for ongoing collaborative development to enhance teacher confidence/pupil attainment		
Wider system outcome 2	Embedding cultural change/resource		

	dissemination beyond the original intervention group		
Wider system outcome 3			
Enter additional Outcome Name add extra lines as necessary			

3.2 Did you make any changes to your project's activities after your Theory of Change was validated? Yes/No

No significant changes were made, but some minor adjustment in the offering took place (see below).

If **Yes**, what were these changes (e.g. took on additional activities?)

3.3 Did you change your curriculum subject/s focus or key stage? Yes/No

If **Yes**, please explain what changes you made, why, and provide some commentary on how they affected delivery.

3.4 Did you evaluate your project in the way you had originally planned to, as reflected in your validated evaluation plan?

Consider changes to evaluation tools/methods, sample sizes, and anticipated outcomes. If applicable, please explain what changes you made and why, and provide some commentary on how they affected your evaluation.

4. Evaluation Methodological Limitations

4.1 What are the main methodological limitations, if any, of your evaluation?

This can include data limitations or difficulty in identifying a comparison group. In order to get a realistic idea of the strength of your evaluation, and identify possible improvements, it is essential that you reflect on the strengths and weaknesses of your evaluation.
You should address limitations of the evaluation only, not the project itself - *Every evaluation has limitations, so please be honest. This could include limitations relating to:*

- *The kinds of data you could/ could not collect (and the response rate for surveys)*
- *The size of the sample/ group you are evaluating*
- *The extent to which you felt able to assess the impact of activity on beneficiaries (what changes in attitudes/behaviours/attainment were caused by the intervention and what has been caused by other factors)*
- *Also include mitigating actions for methodological limitations where possible – e.g. alternative approaches or solutions and also how these limitations will affect the evaluation of the project (particularly pupil and teachers outcomes).*

As referred to above, the original evaluation framework proposed in March 2014 was too diffuse and ambitious. After feedback proposing a focus on key outcomes and a subsequent meeting with Project Oracle in October 2014, amendments were discussed and implemented to facilitate

focus of evaluation, to endeavour to ensure a broader range of evaluation methods (rather than over-reliance on questionnaires, although in the event such additional data has proved difficult to collect and the main evaluation method has remained questionnaires), to ensure harmonisation of questionnaires across different strands of the project which has ensured that it is easier to group evaluation material and compare the impact of the project across a range of different strands more readily (the questionnaire structures up to the point of the October 2014 Interim Evaluation did not always establish a basis for direct comparison of impact). Another evaluation need established by liaison with Project Oracle was to ensure a more realistic approach to establishment of baseline data, of which there remains a dearth in key areas of the PLASMA-T project (e.g. Computing subject knowledge for teachers and prior attainment for pupils). The principal method of assessing this has remained pre- and post- intervention questionnaires, although some tests to establish key areas of baseline knowledge, as discussed with Project Oracle in October of 2014, were successfully used to demonstrate impact.

One of the greatest challenges in our methodology has remained demonstrating the integrity of the causal chain connecting our interventions with teachers to both immediate and longer term enhancement of pupil outcomes and aspirations and in large part this was inevitable given the curtailed duration of the project and the fact that participants, particularly in the secondary school group of partners, dipped into and out of the project initiatives on a need-driven and selective basis, rather than committing to a suite of events. Some outcomes will only be apparent after the term of the project is concluded. A range of other challenges have continued to face us, specifically regarding collection of pupil-related impact data. There remains little scope for gathering baseline data regarding student performance in some of our key strands – e.g. Computing – owing to the recent nature of curriculum change. Some baseline tests were created to assess knowledge of computing at the outset of intervention (this happened in Science and Computing strands for primary partners with simple questions such as “do you know what soil is made of?” Or “do you know what an algorithm is?” and such tests proved useful in benchmarking impact and demonstrating that knowledge gain in key areas of computational and scientific thinking were directly owing to the intervention of PLASMA-T initiatives. Some of the tests deployed are included with the scanned questionnaires which we have collected from virtually every event and are available on request.

Another issue we faced is that not all initiatives had data collected from them. The work conducted with the Sevenoaks consortium and on the PARC clubs is largely undocumented in terms of impact data beyond general assertions from teachers of the value of these initiatives. Project management worked closely with the delivery team throughout, but there was a breakdown of the evidence and data harvesting chain in these initiatives. Feedback and coverage of impact relating to visiting students attending STEP classes at St Olave’s was similarly patchy in coverage.

Many students have elected to remain anonymous in feedback in events when staff from St. Olave’s have worked directly with pupils and for initiatives where colleagues in partner schools whose engagement with CPD and training might be directly impacting a large number of pupils, we do not always know the extent of the numbers of the pupils who might benefit from teacher intervention, not the composition in terms of key demographics. Regarding the first issue, whilst the anonymity of students protects their identity and potentially amplifies the frankness of their response in questionnaires, it also means that we haven’t always been able to match the feedback of a student in one event to the feedback of the same student in a different and later event. The second issue is a more frustrating one as it means we have had to make considerable assumptions in terms of the scope of our impact – assumptions which are not consistently grounded in direct evidence of impact.

Small sample sizes for some events marginalise the validity of extrapolated conclusions, but we in some areas, we have built up a sufficient corpus over time on which to base evidence of our impact and it is hoped that through engaging with invitation to participate in a case study proposal via the GLA that we might yet gain firmer evidence of the impact of sustained engagement with the PLASMA-T Project.

It has proved all but impossible to establish comparison groups. Many of what we perceive to be the most pronounced impacts have occurred with primary pupils who are from single form entry schools – although the small size of the school makes them more likely to engage, it also reduced our ability to establish comparison groups.

We have not been able to compare outcomes across different ability groups to establish where the greatest benefit has been in this area. That said, we focused our methodology considerably in Year 2 of PLASMA-T, in respect of pupil and teacher impact data.

The original model for LSEF/PLASMA-T was that any given partner school would engage with multiple strands of the project and that one intervention group might therefore benefit from a very broad range of initiatives. In the supply-saturated and demand-driven market of INSET and CPD however, many partner schools only engaged with us on one strand (e.g. secondary Maths), although some have engaged with us on several – mainly primaries. The notion of a fixed teacher intervention group continues to seem flawed from our perspective, particularly in the secondary sector, as colleagues choose to engage on a the basis of demand and limited availability to attend events – "churn" therefore is not so much an intermittent issue as an ongoing feature (even within the course of one series of interventions such as the VB or Python courses which last for four weeks, not all colleagues from partner schools could attend all sessions in the series and sometimes other colleagues might "dropped in" for specified sessions). The demand driven approach also meant that we diversified a little out of our original plan, and took up the challenge of collaborating with primary colleagues to create broader, multi-disciplinary STEM schemes of work, rather than SoWs/resources focused just on one strand (e.g. Computing or Robotics discretely). This was positive in the sense that we provided benefit by supporting our partners in terms of their greatest need (resource and guidance to deliver on new and exacting curricula using our STEM expertise), but it did create further challenges in respect of evaluation as we needed to design new resources and materials at the same time as developing strategies to evaluate them in a fashion consistent with the needs of the evaluation framework, and this was not always possible to balance these two needs. Where we lost out in some places (as with the Sevenoaks consortium work and the PARC clubs), was in the collection of impact data.

The greatest challenges came from the following area of the evaluation: the issues of clarity of need in terms of what we must collect/present and the subsequent logistics of how we might collect/present. We made some headway in Year 2 with the key pieces of data which we need to have collected from the schools (and which should have been collected at the outset) – e.g. pupil sub-group data, although collecting this for whole schools for those schools who benefitted from teacher-only interventions remained an insurmountable challenge. The issues here were commented on at some length in the Interim Evaluation. It remains the school's position that in terms of making this degree of data collection work at system level the GLA, would benefit from a more centralised, clearly defined approach is required which would involve a separate and centralised agency gathering these key baseline data from schools and greater sensitivity to the needs, resources and specialisms of schools (this point was raised very vocally by one or two colleagues in the July workshop on completing the Final Evaluation). A GLA or Project Oracle-run centralised approach to data collection from partner schools would have been very helpful (as well as a centralised approach to marketing of events and activities which would mitigate against the potentially saturated market for INSET/CPD opportunities generated in part as a result of the LSEF, although that is a different issue). This from our perspective would seem a crucial consideration for the success of data collection in any future similar initiatives. The centralised approach to data collection and evaluation would enable parity of baseline data collection from all partners in secondary and primary strands and all subject strands. It would also enable providers to focus on their core competencies and expertise more effectively. Whilst we were confident at the outset regarding the evaluation requirements, increasingly it emerged that our confidence was misplaced and far greater clarity and support is needed for us to deliver the sort of intensely fine detail required to demonstrate the impact/benefit of the project. Presumably if evaluation were more centralised it would also enable more ready comparison

across projects in terms of impact. There is no doubt that we improved in Year 2 in our ability to provide valuable, impact-focused evaluation of the data which we collected, but it remained clear that a centralised approach to baseline data collection would have been immeasurably valuable in terms of meeting the fine detail requirements of the evaluation.

The measurement tools were administered in an increasingly consistent fashion as the project developed. There was variation within the delivery team regarding consistency of collection of impact data, but the planned methodology was, at the outset, to collect impact data at the end of each event or course of events, primarily though questionnaire. After the interim evaluation, it became apparent that we needed to make our questionnaire more simple and focused on project outcomes (namely gains in knowledge and confidence for pupils and teachers) and, ideally to have a data capture method "before" and "after" each intervention to measure differentials. This more structured approach gave a far clearer data set for activities undertaken from midway through Year 2 onwards.

4.2 Are you planning to continue with the project, once this round of funding finishes? Yes

If **yes**, will you (and how will you) evaluate impact going forward?
We will continue to take questionnaires to assess gains in confidence and knowledge and ask open questions inviting feedback on which aspect of given initiatives have proved most valuable/which require refinement in order to sustain the quality and value of the activities which we support.

5. Project Costs and Funding

5.1 Please fill in Table 2 and Table 3 below:

Table 2 - Project Income

	Original[1] Budget	Additional Funding	Revised Budget [Original + any Additional Funding]	Actual Spend	Variance [Revised budget – Actual]
Total LSEF Funding	£300,800	n/a	£300,800	£302,712.46	£-1912.46
Other Public Funding	n/a	n/a	n/a	n/a	n/a
Other Private Funding	£98, 400	n/a	n/a	£98,819.34	£-419.34
In-kind support (e.g. by schools)	n/a	n/a	n/a	n/a	n/a
Total Project Funding	£399,200	n/a	n/a	£401,531.80	£-2331

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

List details in-kind support below and estimate value.

Table 3 - Project Expenditure

	Original Budget	Additional Funding	Revised Budget [Original + any Additional Funding]	Actual Spend	Variance Revised budget – Actual]
Direct Staff Costs (salaries/on costs)	£99,000	£16,000	£115,000	£125,624.66	£-10,624.66
Direct delivery costs e.g. consultants/HE (specify)	n/a	n/a	n/a	n/a	n/a
Management and Administration Costs	£74,000	£5,000	£79,000	£91,515.98	£-12,515.98
Training Costs	n/a	n/a	n/a	n/a	n/a
Participant Costs (e.g. Expenses for travelling to venues, etc.)	£99,300	n/a	£99,300	£82,973.43	£16,326.57
Publicity and Marketing Costs	£10,400	n/a	£10,400	£3,609.89	£6,790.11
Teacher Supply / Cover Costs	n/a	n/a	n/a	n/a	n/a
Other Participant Costs	n/a	n/a	n/a	n/a	n/a
Evaluation Costs	£2,500	£2,000	£4,500	£6,696.13	£-2,196.13
Others as Required – Please detail in full *Recruitment, Finance Admin, Website design & monitoring, Travel, Hospitality, Site staff, insurance, energy*	£15,600	£75,819.34	£91,419.34	£91,081.71	£337.63
Total Costs	£300,800	£98,819.34	£399,619.34	£401,501.80	£-1882.46

5.2 Please provide a commentary on Project Expenditure
This section should include:

- *commentary on the spend profile*
- *budget changes that have occurred, including the rationale for any changes*

(Maximum 300 words)

It was always anticipated that staffing costs would be a significant proportion of the total spend, and this projection has proved correct to within a high degree of accuracy; the variance as a proportion of the total budget is very small. The size of the direct staffing + management and administrative costs was always likely to be a significant proportion of the total given the significant number of people working on the project, several of whom were employed solely or for a very significant proportion of their time on PLASMA-T work, and many of whom were on a fairly high salary on the teachers' pay scale and with additional TLR responsibilities which added to the cost of their involvement in the project. The cost of technical support has also been noteworthy, as our IT support have invested significant time in preparation and maintenance of resources and materials for outreach, including extensive work on the portal (which will be a legacy benefit of the project) - and on the tablets and robots which have been used as a large part of the Primary outreach initiatives. The investment into robotics kits which were gifted to primary partners at the outset, into new hardware which can be used for the Saturday Computer Club (which will continue to run in the legacy period with financial input from the school for staffing costs) and into

tablets which will be used for ongoing outreach work (again in the legacy period) will ensure key aspects of the sustainability of the initiative are in place. We did not spend as much as originally anticipated on publicity and marketing costs or on participant costs.

6. Project Outputs

Please use the following table to report against agreed output indicators, these should be the same outputs that were agreed in schedule 3 of your Funding Agreement and those that were outlined in your 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	16		99	+83
No. of teachers	309		219	-90
No. of pupils	745		756	+11
Enter additional output name *add extra lines as necessary*				

7. Key Beneficiary Data

Please use this section to provide a breakdown of teacher and pupil sub-groups involved in your project.

Data must be provided at project level. However, if you wish to disaggregate data by school then please add additional rows to the tables below. Please also confirm at what point this data was collected.

Please add columns to the tables if necessary but do not remove any. N.B. If your project is benefitting additional groups of teachers e.g. teaching assistants please add relevant columns to reflect this.

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

Please provide your definition for number of benefitting teachers and when this was collected below *(maximum 100 words).*

The number of teachers referred to below is the total number of teachers who have attended one or more PLASMA-T CPD initiatives, networking events or other training opportunities. Several of the colleagues listed will have attended more than one event, and, in some cases, several events (particularly true of primary partners. We have been careful to avoid double counting of individual teachers over multiple events. Data has been collected on an event-by-event basis and entered into a database which has aggregated the attendance and feedback profiles at each event of individual teachers (this database is available on request). This spreadsheet makes no assumptions in terms of how the benefit of project activities and initiatives might have been shared and disseminated within partner schools and it is therefore anticipated that the actual number of colleagues potentially benefitting from project activities and events will be far higher than illustrated below which is a strict measure of those with whom we directly engaged – and from whom we were able to collect data. There remain some events and initiatives from which data was not harvested, and these again would add to the overall number of those benefitting.

Table 5 – Teachers benefitting from the programme

	No. teachers	**% NQTs** ***(in their 1st year of teaching when they became involved)***	**% Teaching 2 – 3 yrs** ***(in their 2nd and 3rd years of teaching when they became involved)***	**% Teaching 4 yrs +** ***(teaching over 4 years when they became involved)***	**% Primary (KS1 & 2)**	**% Secondary (KS3 - 5)**
Project Total	**219**	**7%**	**1%**	**78%**	***29.7%***	***64.4%***
Chelsfield Primary School	4	0%	0%	75%	4	
Cudham Primary School	1	0%	0%	100%	1	
Darrick Wood Junior School	3	33%	0%	33%	3	
Green Street Green Primary School	1	0%	0%	100%	1	
Hayes Primary School	3	33%	0%	33%	3	
Highfield Junior School	17	0%	0%	88%	17	
Holy Innocents Catholic School	10	20%	0%	70%	10	
Lady Boswell C of E School	1	0%	0%	0%	1	
Midfield Primary School	1	0%	0%	100%	1	
Perry Hall Primary School	2	0%	0%	50%	2	
St Mary's Cray Primary School	4	25%	0%	50%	4	
St Mary's Catholic Primary School	2	0%	0%	50%	2	
St Paul's Cray CE Primary School	12	0%	0%	83%	12	
The Highway Primary School	2	0%	0%	100%	2	
Warren Road Primary School	2	0%	0%	50%	2	
Other	2	0%	0%	50%	2	

Bexleyheath Academy	4	0%	0%	100%		4
Bishop Justus CE School	1	100%	0%	0%		1
Blackfen School for Girls	2	0%	0%	50%		2
Bonus Pastor Catholic College	2	0%	0%	100%		2
Bullers Wood School	5	40%	0%	60%		5
Cantebury Academy	1	0%	0%	100%		1
Charles Darwin School	2	50%	0%	50%		2
Chatham Grammar School for Girls	2	0%	0%	100%		2
Cheadle Hulme	1	0%	0%	100%		1
Chichester College	1	0%	0%	100%		1
Chislehurst School for Girls	4	0%	0%	75%		4
Coloma Convent RC Girls' School	1	0%	0%	100%		1
Conisborough College - a Colfe's Associate School	3	33%	0%	67%		3
Coopers Technology College	4	0%	0%	75%		4
Croydon High School	1	0%	0%	100%		1
Darrick Wood School	3	33%	0%	67%		3
Earlsecliffe Sixth Form College	1	0%	0%	100%		1
Erith School	5	20%	0%	80%		5
Forest Hill School	1	0%	0%	100%		1
Haberdashers' Aske's Crayford Academy	7	0%	0%	100%		7
Haberdashers' Aske's Hatcham College	18	0%	0%	67%		18
Haberdashers' Aske's Knights Academy	16	6%	6%	56%		16
Haggerston	1	100%	0%	0%		
Haringey	1	0%	0%	100%		
Hayes School	4	0%	0%	100%		4
Joan Roan School	1	0%	0%	100%		1
Kemnal Technology College	1	0%	0%	100%		1
Kent College	1	0%	0%	100%		1
Knole Academy	1	0%	0%	100%		1
Langley Park School for Boys	1	0%	0%	100%		1
Langley Park School for Girls	5	20%	20%	60%		5
Newstead Wood School	8	0%	0%	100%		8

Norwich High School for Girls	2	0%	0%	100%		2
Notre Dame Senior School	1	0%	100%	0%		1
Queen Elizabeths Grammar School	1	0%	0%	100%		1
Ravens Wood School	3	0%	0%	100%		3
Rivers Academy	1	0%	0%	100%		1
Royal Greenwich University Technical College	1	0%	0%	100%		
Saint Georges Church of England School	1	0%	0%	100%		1
Salesian School	1	0%	0%	100%		1
Shirley High Performing Arts College	1	0%	0%	100%		
St Catherine's Catholic Girls' School	4	25%	0%	75%		4
St Leonards Mayfield	1	0%	0%	100%		
St Paul's Academy	3	0%	0%	67%		3
St Peters's Catholic School, Guildford	1	0%	0%	100%		1
St Wilfrid's Catholic School	1	0%	0%	100%		1
Sutton Valence	1	0%	0%	100%		
Tendring Technology College	2	0%	0%	50%		
The Brit School	1	0%	0%	100%		
The Cooper School	1	0%	0%	100%		
The Hazeley Academy	1	0%	0%	100%		1
The Judd	1	0%	0%	100%		1
The Leigh UTC	2	0%	0%	100%		2
The Ravensbourne School	2	0%	0%	100%		2
Thomas More RC School	1	0%	0%	100%		1
Trinity School	1	0%	0%	100%		1
Twyford C of E High School	1	0%	0%	100%		1
University of Greenwich	1	0%	0%	100%		
Wallington County Grammar School	1	0%	0%	100%		1
Walthamstow Hall	1	0%	0%	100%		1
Weald of Kent	1	0%	0%	100%		1
Wilmington Grammar School For Boys	3	0%	0%	100%		3

7.1.2 Please provide written commentary on teacher sub-groups e.g. how this compares to the wider school context or benchmark *(maximum 250 words)*

Re the above data, in the event of a gap being left in a cell, this is due to the data being "unknown". This also accounts for the percentages not all adding up to 100% as there has been nowhere to record the "unknown" data. As was also discussed at the Evaluation Workshop in July 2015, it has not been possible to simply collate wider school context or benchmark data, and such data varies year on year in any case owing to staff turnover. In any event, many schools who have engaged with the project have done so with only one colleague attending one specific event and some colleagues attending (of those from which we collected data) did not complete the relevant boxes indicating the stage of their career that they were at (see above – 14% of respondents from whom we collected impact data did not complete these boxes). In schools where a more significant proportion of colleagues have benefitted over a range of events (and who have submitted the requested data – mostly the primary partners with whom we have worked over the term of the project on a range of different initiatives), the data patterns are more meaningful and worthy of comment in terms of the teacher subgroups. In some schools (such as Holy Innocents RC Primary School) we have worked with the whole staff and therefore the subgroup proportion of participants exactly reflects that of the wider school context (in this instance, 20% NQT vs 80% 4 Years+ experience). Of the total amount of participants, the vast majority were teachers on 4+ years of experience, and this was true for both secondary and primary partners. Less than 10% of the respondents who recorded the stage of their career in their feedback were NQTs (at least 7% of the total) and only 1% of those who recorded this data were in their second or third year of teaching when they first became involved in the project. What is perhaps noteworthy is the number of Primary partners who include senior leaders as beneficiaries – many of our regular attendees at computing and robotics initiatives were assistant or deputy heads, and these are colleagues who are in a position to effect wider system changes which will ultimately permeate the culture of their entire school. In terms of our secondary partners, many of the attendees, particularly in the Maths and Computing training and networking events were Heads of Department. This is perhaps unsurprising and suggests that knowledge gleaned from the project will have been mobilised and shared within the context of their departments within their schools.

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

Please provide your definition for number of benefitting pupils and when this data was collected below *(maximum 100 words)*

Such data as we have been able to collect on pupil subgroups in terms of those who have engaged with project activities (the intervention groups) has been limited and therefore it has not been possible to establish any overall patterns in terms of pupil subgroups and specific impact on pupil subgroups; some commentary on the proportions of subgroups within key partner schools (as provided by the DfE website) is included below. Students often proved reluctant or unable to log this data on feedback forms which they have completed for themselves and partner schools are often unwilling or lack the resource to share this sensitive data with specific reference to pupils in the intervention groups, although aggregate data was available via the DfE website. There were no statistics logged for this on the student database or the evaluation tables which we have been able to collate, but from individually reviewing all packs of feedback on an event-by-event basis, the following events had data relating to these categories. You will note that these are all secondary partner initiatives. The limited results containing pupil subgroup data by event are:
Oxbridge 2/4/14: 1 EAL
Medics 25/6/14: 1 SEN & 5 EAL
Medics 26/2/15: 2 FSM & 2 EAL
Medics 23/3/15: 4 EAL

On the majority of questionnaires, no one answered this section (although some ticked to say that they had none of the above).

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

	No. pupils	**% LAC**	**% FSM**	**% FSM last 6 yrs**	**% EAL**	**% SEN**
Project Total						
School 1						
School 2						
School 3						
School 4						

	No. Male pupils	**No. Female pupils**	**% Lower attaining**	**% Middle attaining**	**% Higher attaining**
Project Total (Primary Schools)	***258***	***286***			
Chelsfield Primary School	6	14			
Cudham CE Primary School	14	10			
Green Street Green Primary School	1	0			
Highfield Junior School	45	41			
Holy Innocents Catholic Primary School	30	31			

Lady Boswell's Church of England School	15	17			
Perry Hall Primary School	27	26			
St Mary Cray Primary School	14	11			
St Pauls Cray CE Primary School	46	65			
Tubbenden Primary School	1	0			
Warren Road Primary School	59	70			
Other	0	1			
Project Total (Secondary Schools)	***47***	***109***			
Archbishop Tenison's C of E High School	1	0			
Bennett Memorial Diocesan School	0	1			
Beths Grammar School	4	0			
Bullers Wood School	1	10			
Chislehurst and Sidcup Grammar School	1	0			
Coloma Convent RC Girls' School	0	1			
Coopers Technology College	1	0			
Crown Woods College	1	0			
Darrick Wood School	9	6			
Dartford Grammar School for Girls	0	2			
Eltham College	2	1			
Haberdashers' Aske's Knights Academy	3	1			
Langley Park School for Boys	13	20			
Newstead Wood School	4	48			
Norbury Manor Business and Enterprise College	0	1			

Prendergast Hilly Fields College	0	1			
Sedgehill Secondary School	1	1			
St Ursula' s Convent School	0	2			
The Priory School	2	1			
The Ravensbourne School	0	1			
Tonbridge Wells Grammar School for Boys	1	1			
Townley Grammar School for Girls	1	9			
Wilmington Grammar School for Boys Other	1	2			
Other	1	0			

	% 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 (%)	**7%**	**1%**	**1%**	**8%**	**4%**	**9%**	**3%**	**1%**	**0%**	**2%**	**0%**	**1%**	**2%**
Project Total	**12**	**2**	**2**	**13**	**6**	**15**	**5**	**2**	**0**	**4**	**0**	**2**	**3**
Archbishop Tenison's C of E High School													
Bennett Memorial Diocesan School													
Beths Grammar School	2					2							
Bullers Wood School				1	1		1						
Chislehurst and Sidcup Grammar School						1							
Coloma Convent RC Girls' School													

Coopers Technology College												1	
Crown Woods College				1									
Darrick Wood School	1	1		1				1		1		1	
Dartford Grammar School for Girls						1							1
Eltham College				1		1							
Haberdashers' Aske's Knights Academy			1										
Langley Park School for Boys				1	4	3	1	1		1			
Newstead Wood School	1	1	1	7		3	3			1			2
Norbury Manor Business and Enterprise College				1									
Prendergast Hilly Fields College													
Sedgehill Secondary School													
St Ursula' s Convent School													
The Priory School						1							
The Ravensbourne School													
Tonbridge Wells Grammar School for Boys													
Townley Grammar School for Girls	5				1	3							
Wilmington Grammar School for Boys	3												
Other										1			

	% White British	% White Irish	% White Traveller of Irish heritage	% White Gypsy/Roma	% White Any Other
Project Total (%)	16 %	0%			1%
Project Total	27	0			1
Archbishop Tenison's C of E High School					
Bennett Memorial Diocesan School	1				
Beths Grammar School					
Bullers Wood School	5				
Chislehurst and Sidcup Grammar School					
Coloma Convent RC Girls' School	1				
Coopers Technology College					
Crown Woods College					
Darrick Wood School	8				
Dartford Grammar School for Girls					
Eltham College	1				
Haberdashers' Aske's Knights Academy					
Langley Park School for Boys	1				
Newstead Wood School	4				
Norbury Manor Business and Enterprise College					
Prendergast Hilly Fields College					

Sedgehill Secondary School	1				1
St Ursula' s Convent School					
The Priory School	1				
The Ravensbourne School	1				
Tonbridge Wells Grammar School for Boys	2				
Townley Grammar School for Girls	1				
Wilmington Grammar School for Boys					
Other					

7.2.1 Please provide a written commentary on your pupil data e.g. a comparison between the targeted groups and school level data, borough average and London average *(maximum 500 words)*

N.B. We have a lot of data for "unknown" against ethnicity – 43% in fact; this makes it hard to extrapolate meaningful conclusions regarding the engagement of subgroups by ethnicity. Reviewing school data from the DfE website did give some whole school statistics relating to subgroups which were useful and suggestive. Several of the key beneficiary primary partners with whom we worked most closely were from areas of comparative social and economic disadvantage within the borough and had comparatively high proportions of FSM and EAL relative to other schools in the borough (for instance, St Paul's Cray Primary has 46.2% of its pupils currently eligible for FSM and 13.5% as EAL; St Mary Cray Primary has 43.9% FSM and 18.5% EAL – these primary partners were two of our key beneficiaries with whom we worked most closely throughout. These data compare with 3.3% FSM and 8.7% EAL at Warren Road and 9.3% and 6.6% respectively at Holy Innocents RC Primary, which were also key primary partners for PLASMA-T, but whose pupil group proportions are more typical of the percentages within the borough of Bromley as a whole). Whilst we do not have specific data on the subgroups of all of the pupils participating in project activities (i.e. intervention groups), most of the initiatives with primary partners were conducted at a whole class level with unstreamed groups, so the likelihood is that the distribution of subgroups within intervention groups would be broadly consistent with the school total.

With secondary partner schools, data was again fragmented in terms of what specific information we had on intervention groups. Some of the schools we worked with more extensively than others were local secondaries with broad demographics, including Langley Park School for Boys and Newstead Wood Grammar School for girls. It is hoped that forging of such local partnerships will ensure that ongoing working relationships are sustained and developed in key areas (e.g. Oxbridge interview support and medical workshop provision). Of interest in terms of secondary data is the relatively high number of EAL students in the intervention groups for the Medics'

initiatives; a large number of pupils attending and benefitting from these events are from the listed ethnicity groups: “Asian Indian” and “Asian Any Other Background”
Useful links: London Data Store, DfE Schools Performance, DfE statistical releases

8. Project Impact

You should reflect on the project’s performance and impact and use **qualitative and quantitative** data to illustrate this.

- Please complete the tables below before providing a narrative explanation of the impact of your project.
- Please state how you have measured your outcomes (e.g. surveys) and if you are using scales please include details.
- Please add graphical analysis (e.g. bar charts) to further demonstrate project impact on each teachers, pupils, wider system outcomes etc. If you use graphs, please ensure that all charts are explained and have clear labels for the axes (numeric data or percentages, for example) and legends for the data.

Please add columns to the tables if necessary but do not remove any. N.B. If your project is collecting data at more than two points and may want to add additional data collection points.

8.1 Teacher Outcomes

Date teacher intervention started: 5th June 2014

Table 9 – Teacher Outcomes: teachers benefitting from the project

The 1st Return will either be your baseline data collected before the start of your project, or may be historical trend data for the intervention group. Please specify what the data relates to.

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1st Return and date of collection	2nd Return and date of collection
Increased Teacher **Confidence** - Scratch	Questionnaire		1 – least confidence gained 9 – most confidence gained		7.7
Increased Teacher **Confidence** - VEX Robotics	Questionnaire	Data collected from 10 subjects	1 – least confidence gained 9 – most confidence gained		5.5
Increased Teacher **Confidence** - Python	Questionnaire	7 subjects – Data collected from 6 subjects	1 – least confidence gained 9 – most confidence gained	Confidence to teach students	
					7
				Confidence to teach colleagues	
					6.9
Increased Teacher **Confidence** - Computing INSET	Questionnaire	34 subjects – Data collected from 27 subjects	1 – least confidence 9 – most confidence	Algorithms	
				2.6	4.8
				FLOWOL	
				2.1	4.8

Increased Teacher **Confidence** - Teaching KS2 Curriculum	Questionnaire	7 subjects – data collected from 6 subjects	1 – least confidence 9 – most confidence	Teaching subject	
				2.3	3.5
				Assessing Topics	
				1.7	3.8
Increased Teacher **Confidence** - Programming INSET	Questionnaire			X	X
Increased Teacher **Confidence** - Progression INSET	Questionnaire			X	X
Increased Teacher **Confidence** – Geogebra	Questionnaire	Data collected from 6 subjects	1 – least improvement 9 – most improvement		6.8
Increased Teacher **Confidence** - Prep for Maths A Level	Questionnaire	X	X	X	X
Increased Teacher **Confidence** - Mechanics AS	Questionnaire	Data collected from 22 subjects	1 – least confidence 9 – most confidence	4.3	6.0
Increased Teacher **Confidence** - Science John Medlicott INSET	Questionnaire	Data collected from 18 subjects		X	X
Increased Teacher **Confidence** - Computing Clinic	Questionnaire	Data collected from 19 subjects	1 – least improvement 9 – most improvement		4.7
Increased Teacher **Confidence** - Visual Basic Training	Questionnaire	X	X	X	X
Increased Teacher **Confidence** - Python Training	Questionnaire	10 subjects- data collected from 9 subjects	% question correct	2.8	X
Increased Teacher **Confidence** - Fusion Multimedia	Questionnaire	6 subjects – Data collected from 5 subjects	1 – least confident 9 – most confident	4	
Increased Teacher **Confidence** - Microsoft Access	Questionnaire		1 – least confident 9 – most confident	4	
Increased Teacher **Confidence** - Charles Darwin	Questionnaire	18 subjects – data collected from 14 subjects		PYTHON	
				4.9	5.8
				Fusion	
				2.7	5.3

Computing CPD				GCSE Computing	
				4.9	6.5
Increased Teacher **Confidence** - KODU	Questionnaire	Data collected from 1 subject	1 – least confident 9 – most confident	2	
Increased Teacher **Confidence** - A Level/GCSE Computing	Questionnaire			X	X
Increased Teacher **Confidence** - GCSE Computing	Questionnaire	Data collected from 3 subjects	1 – least confident 9 – most confident	Boolean	
				3.3	6.2
				SQL	
				2.0	5.1
Increased Teacher **Confidence** - Teaching Coaching	Questionnaire			X	X
Increased Teacher **Confidence** - KS3 Curriculum Delivery	Questionnaire	10 subjects – Data collected from 9 subjects	1 – least confident 9 – most confident	4.4	
Increased Teacher **Confidence** - Outstanding Teacher Program	Questionnaire	7 subjects – data collected from 6 subjects	1 – least confident 9 – most confident	6.7	7.8
Increased Teacher **Knowledge** - Scratch	Questionnaire	Data collected from 9 subjects		2.6	7.7
Increased Teacher **Knowledge** - VEX Robotics	Questionnaire	Data collected from 10 subjects		1.0	6.5
Increased Teacher **Knowledge** - Python	Questionnaire	7 subjects – Data collected from 6 subjects		2.4	6.9
Increased Teacher **Knowledge** - Computing INSET	Questionnaire	34 subjects – Data collected from 27 subjects	1 – least knowledge 9 – most knowledge	Algorithms	
				2.8	5.3
				FLOWOL	
				2.1	5.0
				Computer Progression	
				2.8	3.3
Increased Teacher **Knowledge** - Teaching KS2 Curriculum	Questionnaire	7 subjects – data collected from 6 subjects	1 – least knowledge 9 – most knowledge	Programme of study 2.3 4.5 Topics 1.8 3.7 Mapping 1.3 2.8	
Increased Teacher **Knowledge -** Programming INSET	Questionnaire				
				X	

Increased Teacher **Knowledge** - Progression INSET	Questionnaire			X	X
Increased Teacher **Knowledge** - Geogebra	Questionnaire	Data collected from 6 subjects		X	X
Increased Teacher **Knowledge** - Prep for Maths A Level	Questionnaire	X		X	X
Increased Teacher **Knowledge** - Mechanics AS	Questionnaire	Data collected from 22 subjects	1 – least knowledge 9 – most knowledge	4.3	X
Science John Medlicott INSET	Questionnaire	Data collected from 18 subjects		6.6	6.2
Increased Teacher **Knowledge** - Computing Clinic	Questionnaire	Data collected from 19 subjects		KODU	7.5
Increased Teacher **Knowledge -** Visual Basic Training	Questionnaire	11 subjects - Data collected from 10 subjects	% question correct	Fusion	2.1
				VB	1.1
				FLOWOL	4.1
				Scratch	3.4
				Python	5.5
				HTML	4.5
				Greenfoot	5.1
				GCSE Computing	2.6
				A Level Computing	4.1
				17%	3.0
Increased Teacher **Knowledge** - Python Training	Questionnaire	10 subjects- data collected from 9 subjects	% question correct	11%	71%
Increased Teacher **Knowledge** - Fusion Multimedia	Questionnaire	6 subjects – Data collected from 5 subjects	1 – least knowledge 9 – most knowledge	4.6	81%
Increased Teacher **Knowledge -** Microsoft Access	Questionnaire	Data collected from 2 subjects	% question correct	75%	
			% question correct	33%	

Increased Teacher **Knowledge** - Charles Darwin Computing CPD	Questionnaire	18 subjects – data collected from 14 subjects		PYTHON	
Increased Teacher **Knowledge -** KODU	Questionnaire	Data collected from 1 subject	1 – least knowledge 9 – most knowledge	5.0	
				Fusion	5.9
				2.7	
				GCSE Computing	5.2
				5.1	
				2	6.5
Increased Teacher **Knowledge** – A Level/GCSE Computing	Questionnaire		% question correct	40%	
				X	80%
Increased Teacher **Knowledge** - GCSE Computing	Questionnaire	Data collected from 3 subjects		Boolean	X
Increased Teacher **Knowledge** - Coaching	Questionnaire			3.7	
				Data Representation	6.3
				3.6	
				X	6.9
Increased Teacher **Knowledge** - KS3 Curriculum Delivery	Questionnaire	10 subjects – Data collected from 9 subjects	% question correct	71%	X
Increased Teacher **Knowledge** - Outstanding Teacher Program	Questionnaire	7 subjects – data collected from 6 subjects	1 – least knowledge 9 – most confident	7.2	81%

Table 10 – Comparison data outcomes for Teachers *[if available]* *Unavailable*

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1st Return and date of collection	2nd Return and date of collection
e.g. Increased Teacher confidence	*e.g. E-survey*	*e.g. 100 respondents from a total of 200 invites.* *The profile of respondents was broadly representative of the population as a whole.*	*e.g. Mean score based on a 1-5 scale (1 – very confident, 2 – quite confident, 3 neither confident nor unconfident, 4 - quite unconfident, 5 – very unconfident)*	*e.g. Mean score*	*e.g. Mean score*

8.1.1 Please provide information (for both the intervention group and comparison group where you have one) on:

- Sample size, sampling method, and whether the sample was representative or not
- Commentary on teacher impact (please also refer to table 5 re impact on different groups of teachers)
- Qualitative data to support quantitative evidence.
- Projects can also provide additional appendices where appropriate.

(Minimum 500 words)

- Teachers in the intervention group generally returned surveys/questionnaires and in some instances completed quizzes to assess baseline knowledge and knowledge gain, so sample sizes are largely good and representative of the total level of participation in training/CPD/networking initiatives. Sample size varied from event to event as the number of attendees varied greatly from event to event, and even within individual courses is was not always the case that the same intervention group attended each weekly session (e.g. in the session which focused on programming languages).
- For teacher impact, events overwhelmingly had a positive impact expressed both in terms of enhanced levels of teacher confidence and knowledge (see tables above). In some cases on computing courses we were able to harvest supplementary data from "before" and "after" quizzes which demonstrate knowledge gain is directly attributable to PLASMA-T interventions (such quizzes only took place after the October 2014 meeting with Project Oracle, but where they happened, the impact data was appreciable and striking, for instance the knowledge gain in Python as a programming language for the 9 respondents (from an intervention group of 10 participants) rocketed up from 11% at the start of the course to 71% at the end, and whilst other factors may have supported progress, quantitative evidence from teacher feedback suggests that knowledge gain was largely attributable to project initiatives. With secondary partners, the Computer Programming CPD initiatives on a range of languages show the greatest impact data, and perhaps this is due in part to the composition of the intervention group. The impact on knowledge and confidence of maths teachers following interventions, whilst positive and encouraging, is less pronounced than for Computing, but whilst group data measured by the tables above reveals relatively little, the fact that a higher proportion of secondary maths participants were Heads of Department or of Key Stage and that several of our intervention group for Computing were younger teachers without TLRs, suggests that the likelihood of gaining confidence and knowledge was likely to be less in the first place, as they had a higher starting point (particularly than secondary colleagues learning Computing who had previously only taught or focused primarily on ICT). With primary colleagues, impact on confidence in Computing was more pronounced than with secondary colleagues, and whilst teaching confidence increased, confidence in assessing pupils for computing increased more considerably.
- Feedback from teachers whilst somewhat generalised rather than specific in terms of impact, was largely very positive and supported the assertion that gains in confidence and knowledge were directly attributable to the project e.g. primary partners typically made comments like "excellent and enjoyable tuition", "very helpful and informative" and "excellent training clearly delivered" following programming INSETs. Feedback forms also contained helpful suggestions on where knowledge and confidence could be further developed through intervention and our evaluation tools also became useful expedients for tailoring a more demand-driven offering, particularly for the Computing strands of the project at both primary and secondary level.
- A full set of scanned feedback on which the above aggregates and containing further qualitative data are based (including expressions of preference for additional INSET, as well as positive feedback on the value of the interventions) is available.

- Attached as appendices to this revised evaluation are three spreadsheets which graphically illustrate the extent of the project impact by event relative to the main two project outcomes: enhanced levels of teacher confidence in STEM subjects, and enhanced levels of teacher knowledge/subject specific pedagogy in STEM subjects.
    - Confidence: Substantial gains in confidence are evident in a range of initiatives (see "Increase in Teacher Confidence spreadsheet" attached), both where a differential is shown between knowledge before/knowledge after, and where a % improvement at the end of the event was the main method of data capture. Most of the data collected for this aspect of the project comes from the primary and secondary computing events, although, some gain in confidence (12.3% positive differential) is evident also from the OTP strand and some clear gains in confidence are also evident in Maths events (with the 75.6% improvement in teaching Geogebra being particularly noteworthy). The specific events which had the greatest impact in terms of developing teacher confidence were the Python training sessions for Computing, in which 77.8% improvement in confidence was registered in terms of teaching students this programming language and 76.6% improvement in confidence was recorded in terms of teaching colleagues to use this programming language. Where the measure was a differential, gains appeared to be smaller, but were palpable nonetheless, with the most clear differentials in teacher confidence being recorded in the following CPD initiatives: teaching algorithms, teaching FLOWOL, teaching Fusion, teaching GCSE Boolean logic, teaching GCSE SQL.
    - Knowledge/Pedagogy: There is a broad correspondence in the teacher level between developing levels of confidence and developing levels of confidence, and many of the comments made above apply to the commentary for this outcome also. Significant gains in knowledge from "before and after" measures were recorded in all areas of Computing training and CPD, as well as in Robotics training. The greatest gains were recorded against enhanced teacher knowledge in Python, VB, KODU and Scratch. Development of knowledge amongst Maths teachers was less pronounced, but still encouraging; the greater differential in knowledge for Computing relative to Maths was expected given that all Maths colleagues participating in our events were already subject experts, whereas those training in Computing were not all subject experts. Knowledge gain amongst teachers attending Higher Education initiatives (Oxbridge, Medics, US applications) was again generally less pronounced, but still positive and encouraging given that many of them started from a higher baseline level of knowledge at the outset.

8.2 Pupil Outcomes

Date pupil intervention started: *2nd April 2014*

Table 11 – Pupil Outcomes for pupils benefitting from the project

The 1st Return will either be your baseline data collected before the start of your project, or may be historical trend data for the intervention group. Please specify what the data relates to.

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1st Return and date of collection	2nd Return and date of collection

Increase in pupil **knowledge** - Maths and Science Challenge Day	Questionnaire	256 subjects Data collected from 141 subjects	% question correct	Chromatography 9% 71% Electromagnets 37% 97%
			1 – least improvement 5 – most improvement	Improved in Maths 3.7
Increase in pupil **knowledge** - Maths and Science Challenge Day 2	Questionnaire	240 subjects Data collected from 226 subjects	% question correct	Chromatography 16% 67% Explain Rockets 90.1% Understand Rockets 96%
			1 – least improvement 5 – most improvement	Improved in Maths 3.6
Increase in pupil **knowledge** - Science Week	Questionnaire		X	X X
Increase in pupil **knowledge** - VEX Robotics – S	Questionnaire	Data collected from 156 subjects	% question correct	Ability to build robots 14.6% 97.5%
			1 – least increase 5 –most increase	Increase in Knowledge 4.6
Increase in pupil **knowledge** - Saturday Morning Club	Questionnaire	77 subjects Data collected from 56 subjects	% question correct	Algorithms 18% 98% FLOWOL 1.5% 97% Scratch 32% 96% KODU 1.5% 95%
Increase in pupil **knowledge** -	Questionnaire	288 Subjects	% question correct	Algorithms 45% 98% Scratch

Computing Day		Data collected from 208 subjects		57%	91%
				FLOWOL	
				6.5%	99%
Increase in pupil **knowledge** - Robotics using VEX IQ & Flowol	Questionnaire	9 subjects Data collected from 6 subjects	% question correct	5.5%	100%
VEX Robotics Competition	Questionnaire	X	X	X	X
Increase in pupil **knowledge** - Higher Education Medics Event	Questionnaire	91 subjects – data collected from 72 subjects	1 – least clarity 9 – most clarity	5.3	7.7
			1 – least knowledge 9 – most knowledge	5.6	7.3
Increase in pupil **knowledge** - Access to the VLE	Questionnaire			X	X
Increase in pupil **knowledge** - USA College	Questionnaire		1 – least knowledge 9 – most knowledge	2.7	6.7
Increase in pupil **knowledge** - Oxbridge Evening	Questionnaire	33 subjects – data collected from 4 subjects	1 – least knowledge 9 – most knowledge	6.4	8

Table 12 - Pupil Outcomes for pupil comparison groups *[if available]* *unavailable*

Target Outcome	Research method/ data collection	Sample characteristics	*Metric used*	1st Return and date of collection	2nd Return and date of collection
e.g. Increased educational attainment and progress in Writing	*e.g. Pupil assessment data*	*e.g. Characteristics and assessment data collected for 97 of 100. The profile of respondents matches that initially targeted in the Theory of Change.*	*e.g. mean score or percentage at diff National Curriculum Levels or GCSE grades*	*e.g. Mean score- 3.7, collected September 2015*	*e.g. Mean score- 4.5, collected June 2015*

		Please find detailed analysis of the profile of respondents in Section 7.2			

8.2.1 Please provide information (for both the intervention group and comparison group where you have one) on:

- Sample size, sampling method, and whether the sample was representative or not Commentary on pupil impact (please also refer to table 6-8 re impact on different groups of pupils)
- Qualitative data to support quantitative evidence.
- Projects can also provide additional appendices where appropriate.

(minimum 500 words)

Pupil impact data is far more striking than teacher impact data, both in terms of knowledge and confidence gain expressed through questionnaires and in terms of knowledge gain expressed through quizzes before and after intervention to assess impact of intervention

- Sample size as a proportion of participants was generally very good and representative, barring for a handful of events (e.g. Oxbridge evening, VEX Robotics festival, PARC clubs and Sevenoaks events, in which data collection was either very limited or entirely absent).
- Impact data on specific groups, as explained above, was hard to identify owing to the fact that pupils often neglected to complete this data (it being hard to differentiate for the youngest students and many ignoring it or being reluctant to include it if older). Impact of some events on knowledge and confidence seems very immediately attributable to project interventions. Specific gains in knowledge (regarding a range of topics, including Chromatography, Electromagnets, Graphs/Orienteering for maths) demonstrably accrued during Maths and Science activity days for Primary students. Knowledge of programming, algorithms and building robots was also dramatically increased amongst the intervention group following a range of initiatives which worked directly with primary pupils. The Saturday Computing Club, which will continue to run courses in the legacy period, made one of the most significant impacts on knowledge gains, and qualitative data amassed over the course cited a steady gain in skills and confidence in a range of specific programming areas across the duration of the course. Although not included as a separate group for analysis under the terms of the final evaluation form, the parents who attended this course also felt they had gained considerably in skills and knowledge. The greatest impact on secondary pupils was in the knowledge and confidence regarding medical applications gained as a result of medics' workshops. Gains in knowledge were also apparent with the Oxbridge and US colleges application programme events, but were less pronounced. With the medics' events, the greatest impact on knowledge and confidence was felt with the Key Stage 4 participants; several of the key stage 5 participants, whilst citing gain in knowledge, felt that they had a higher starting point in terms of their awareness of the application process.
- Qualitative data was for the most part extremely positive and expressive of gratitude for the PLASMA-T project. Impact and effectiveness of delivery was clear from a range of comments, including that from teachers in partner schools who observed their pupils learning during PLASMA-T initiatives. One such teacher commented: "Pedagogical skills were excellent, allowing the class time to explore and confidently

stopping at appropriate times to further explain…{the class would benefit from further sessions} absolutely to build on the progress I have seen today". Such comments noted the impact of active learning strategies on both the level of pupil engagement and quality of pupil outcomes. There was a dual benefit in such practices as this, as we had planned for primary colleagues to observe the delivery of computing experts from our outreach team in order to assist with the development of teachers' pedagogy at the same time as enhancing pupil knowledge and confidence. Pupil comments were likewise consistently positive. Pupil comments on Computing outreach such as "My favourite bit was all of it" and "it could not be better" do not specifically demonstrate an impact on knowledge, but imply engagement, confidence and an enhanced degree of enthusiasm for STEM subjects.

- A full set of scanned feedback on which the above aggregates and containing further qualitative data are based (including expressions of preference for additional INSET, as well as positive feedback on the value of the interventions) is available.
- Attached to the email containing this revised evaluation are two additional spreadsheets which graphically illustrate the increase in knowledge (a target outcome) for primary school students and for secondary school students.
    - The primary school spreadsheet shows significant gains in knowledge across a range of relevant topics explored within several different events. Gains in knowledge of chromatography and electromagnetics were significant during the Science and Maths day events. Pupils experienced significant gains in knowledge of robot building as a result of the Robotics Festival (leaping from 14.6% to 97.5%). FLOWOL and VEX IQ programming events also resulted in huge gains in knowledge amongst primary participants, although this was less the case with scratch. The results are somewhat unsurprising given that all the areas of greatest gain relative to the events listed above were in areas of which the pupils had very little prior knowledge. It was particularly pleasing to see that knowledge gains were still significant in the longer courses with greater dosages – the Saturday morning Computing club recorded strong gains in knowledge in all programming languages (albeit slightly less in Scratch owing to a higher baseline level of knowledge at the start of the course). Gains in knowledge regarding Kodu, FLOWOL, Python and Algorithms were all significant during the course of the Saturday morning Computing club and gains in confidence as expressed in qualitative data were also evident.
    - In the secondary school events, gains in pupil knowledge were also pronounced, but less so than with the primary events and initiatives. Less gain was recorded in knowledge of the Oxbridge application process after interventions, but gains were still appreciable (67% before to 90.1% after) and reflect the fact that pupils came with a higher baseline level of knowledge prior to intervention. The greatest gains in knowledge and confidence came about as a result of the various Medics' event and workshops which we ran, with aggregated totals showing that clarity/understanding of the process leapt from 9% to 71% and knowledge of the process of application before and after intervention jumped from 37% to 97% respectively. There was some variation within these figures once we drilled down, with clearer gains in knowledge apparent in the Y10 and Y11 workshops than for the Y12 workshops. Again this variation was unsurprising given that Y12 students would be expected to have a higher baseline level of knowledge than students in KS4.

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
e.g. Teachers/schools involved in intervention making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice	*e.g. Paper survey*	*e.g. Surveys completed by all participating teachers*	*e.g. average number of events attended per teacher per year before the project and over the course of the project*	*e.g. Average number of events attended in the academic year 2012-2013: 3.2*	*e.g. Average number of events attended in the academic year 2013-2014: 4.3* *Average number of events attended in the academic year 2014-2015: 4.5*

8.3.1 Please provide information on *(minimum 500 words):*

- Sample size, sampling method, and whether the sample was representative or not
- Commentary on wider system impact qualitative data to support quantitative evidence.
- Projects can also provide additional appendices where appropriate.

Our evaluation and sampling of these outputs was far more challenging and harder to demonstrate and quantify. Sample sizes for this outcome are negligible and would benefit from greater substance. Virtually all of what can be recorded for this outcome is qualitative rather than quantitative.

It can truthfully be said that most of our partner schools established through the PLASMA-T project would like to continue to participate in sustainable networks for ongoing collaborative development to enhance teacher confidence and pupil attainment (this being one of our two main desired wider system outcomes); this has been evidenced in the range and immediacy of support which we garnered for our recent Maths hub application. We asked 20 of our closest partner schools from PLASMA-T if they would wish to continue working with in our mathematics initiatives, and all 20 said yes without hesitation. It is hoped that in the legacy period of the project that much of the benefit of collaboration and the synergies which have developed through sharing not only expertise but reflecting on common experience will be sustained and developed through the Maths hub model.

The aim to achieve resource dissemination beyond the original intervention group was achieved in the sense that we began the project with 16 partner schools and ended up with almost 100, many of whom benefitted directly from a culture of sharing resources via the PLASMA-T portal, and many of whom will continue to do so freely in the legacy period of the project. Many of the resources here deployed will go on to be more widely disseminated still via the Woodard group by dint of the upcoming SCHOLA project, and forthcoming resources designed for this initiative will also be uploaded to the PLASMA-T legacy portal.

Embedding cultural change is the most challenging outcome to measure, and ultimately is very hard to assess as a result of a project whose funded term has only been five

terms. That said, we have fostered a more collaborative and aspirational culture in the schools we have worked with, and this is evidenced in some of the qualitative feedback which we have received which is very vocal in its desire to continue working with St Olave's. Anecdotally, although not through formally collected data, we have learned that involvement in OTP in some partner schools has helped to foster a culture in which lesson walk-throughs (often with very specific focuses) have become more of the norm and colleagues have taken more to informal observation as a means of informing and sharing best practice and focusing on how to develop and refine skills (rather than just focusing on observation as a means of reaching a judgement on competency); this is very much the philosophy of observation at St Olave's and it is one which we have been glad to share with partner schools. It also directly addresses one of the teacher outputs for which we have been striving as it engenders a greater confidence not only in terms of developing pedagogy but also in terms of staff's faith in leadership as colleagues who have an interest in the ongoing professional development of their staff.

8.4 Impact Timelines

Please provide information on impact timelines:

- At what point during/after teacher CPD activity did you expect to see impact on teachers? Did this happen as expected?
  Whilst we ran a diverse range of initiatives, the expectation in this respect did not vary greatly from strand to strand and activity to activity. We did expect to see immediate gains in knowledge and confidence off the back of each activity (and following individual dosages of longer courses of intervention), particularly during programming sessions, robot building sessions, one off secondary maths courses, medics' workshops (although primarily for students, some teachers did also attend) and science networking/best practice-sharing events. The cumulative impact of courses of intervention, like the secondary school teachers' programming courses, would of course develop over time and we anticipated that colleagues would take time to digest new learning and embed it in their teaching, meaning that the trickle-down effect of impact on the pupils they taught would take longer. Some initiatives (such as OTP) we anticipated would not necessarily have such immediate impact, as part of the ethos of OTP is that you learn pedagogic skills, practise their implementation, reflect on them individually and then collaboratively in subsequent sessions before the full impact of the benefit can be felt for the colleague, let alone for the pupil. Whilst we have been unable to assess the cumulative pupil impact of interventions with colleagues, questionnaire and, latterly, test data demonstrate that we were for the most part right to anticipate immediate impact as a result of most CPD/networking/INSET and other teacher training initiatives.

- At what point during/after teacher CPD activity did you expect to see impact on pupils? Did this happen as expected?
- As above, we anticipated for the most part that impact on pupils as a result of teachers gaining in skills and knowledge would take time. However, also as above, from events in which we worked directly with pupils, we anticipated more immediate gains in knowledge and confidence (e.g. as with classroom outreach initiatives for programming, science week and Maths & Science days, Medics' workshops, Oxbridge and Harvard evenings, Robotics festival, STEP outreach etc). We also anticipated that impact would be cumulative over time as with multi-dosage initiatives such as the Saturday morning computing club, PARC and the various ongoing programming outreach initiatives which took our delivery team directly into primary classrooms over a period of weeks and months). Impact data suggests strongly that this happened as anticipated, with some very immediate and pronounced gains in

skills and knowledge attested to by questionnaires and by tests for some of the later events (subsequent to meeting with Project Oracle in October of 2014).

- At what point did you expect to see wider school outcomes? Did this happen as expected?
  It was always anticipated that these would be rather more of a slow burn in terms of impact, as wider school outcomes are dependent on broader cultural change, and even when working with senior leaders, as we did with several of our primary outreach initiatives, effecting and embedding cultural change inevitably takes time. That said, from the outset of our activities, primary partners in particular expressed a desire for sustainable contact and ongoing support/outreach initiatives both for pupils and teachers and that desire to maintain collaborative networks for events such as the Robotics Festival, Maths and Science Days etc has gained momentum over the course of the project. The development of a culture of peer observation and reflection on sharing best practice via OTP was always going to take longer to embed, as these are initiatives which take time for individuals to complete the dosage (a whole suite of OTP will take place generally over at least 7 weeks, sometimes longer depending on the spacing of the sessions), and then to put a full range of colleagues in an individual school through the programme can take years, as it has done at St Olave's.

- Reflect on any continuing impact anticipated.
  We anticipate that the continuation of Saturday Morning Computing Club will continue to have impact, as will the ongoing OTP programme (although extent of uptake will remain a challenge for us to address through marketing, owing to the investment of time which it demands of colleagues visiting from other schools). We also anticipate ongoing impact in terms of healthy collaboration and competition between primary partners through initiatives such as the Maths & Science days and the Robotics Festival and, particularly if our application for Maths hub status is successful, through a range of ongoing initiatives to support teachers and pupils in mathematical outreach initiatives. Ongoing impact on medical and Oxbridge applications is anticipated via SCHOLA and the PLASMA-T portal will continue to support the confidence and knowledge of secondary pupils and teachers through its unparalleled range of Oxbridge interview resources and high level mathematical resources. Pupils from local secondaries will continue to be invited to STEP and MAT preparation classes and ongoing impact is also anticipated here.

9. Reflection on overall project impact *(maximum 1,500 words)*

In this section we would like you to reflect on:

- The overall impact of your project
- The extent to which your theory of change proved accurate
- How your project has contributed to the overall aims of LSEF
- Whether your findings support the hypothesis of the LSEF
- What your findings say about the meta-evaluation theme that is most relevant to you

Please illustrate using the key points from the previous detailed analysis.

All the evidence should be brought together here (achievement of outputs and outcomes, and the assessment of project impact) to produce well informed findings, which can be used to inform policy development in a specific area as well as the meta-evaluation of the LSEF.

The London Schools Excellence Fund (LSEF) is based on the hypothesis that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration.

The aims of the Fund:
I. Cultivate teaching excellence through investment in teaching and teachers so that attention is re-focused on knowledge-led teaching and curriculum.
II. Support self-sustaining school-to-school and peer-led activity, plus the creation of new resources and support for teachers, to raise achievement in priority subjects in primary and secondary schools (English, mathematics, biology, chemistry, computer science, physics, history, geography, languages).
III. Support the development of activity which has already been tested and has some evaluation (either internal or external), where further support is needed to develop the activity, take it to scale and undertake additional evaluation.
IV. In the longer term, create cultural change and raise expectations in the London school system, so that London is acknowledged as a centre of teaching excellence and its state schools are among the best in the world.

Overall impact of the project:

- The overall impact of the project has been substantial and, it is to be hoped, will be sustained in the legacy period (see section 12 and the final bullet point of 8.4). A very large number of individual pupils and teachers working with us on PLASMA-T have developed in confidence and knowledge in a range of challenging subject areas relating to STEM, and the extent of the trickle-down impact on pupils who are taught by colleagues with whom we have worked is likely to be substantial although cannot be quantified at the time of writing. Whilst some beneficiaries have only benefitted from individual events, many beneficiaries, both pupils and staff, particularly in the primary sector, have experienced cumulative impact over multiple strands, and it is hoped that through engaging with the case study initiative (perhaps with St Paul's Cray Primary school, who were one of our key beneficiaries, and who had one of the most pronounced diversities of different pupil groups on which to assess impact), that we might be able to assess this impact to a finer degree of detail. The full impact of the project will not be felt for some time, as much of it depends on ongoing cultural change in partner schools as new curricula (especially in primary computing) and new practises become embedded. As above it is also anticipated that the impact of the project will be ongoing in terms of legacy initiatives, some of which will be funded by the school and for others of which we are actively pursuing other funding streams.

The extent to which the theory of change proved accurate:

- The theory of change proved accurate to a large extent, although the issue of attribution remains a matter for debate, our impact data strongly suggests to us that our various

outreach initiatives did ultimately lead to a sustainable culture in which the teaching of STEM subjects in London schools can continue to develop by allowing classroom teachers access to cutting edge knowledge. The sustainability aspect is addressed through various strands of the legacy agenda. The extent to which pupil aspirations and attainment has developed is perhaps harder to quantify in the broader sense, but has been most focused in the KS2 area, although KS4 and KS5 were also positively impacted. The target of 7,500+ pupils benefitting has been reached in terms of the number of pupils taught by teachers engaging with the project and 10% of that figure have worked directly with the PLASMA-T project being taught, trained or worked with by our delivery team. For that 10%, the impact data demonstrates for the vast majority that engagement with the project developed knowledge and confidence in STEM subjects, and for a proportion of that 10%, mostly in the primary sector, pupils have had the cumulative benefit of multiple direct interventions for them and their teachers, and it is here that the greatest prospect of large and sustained impact exists. Unfortunately we do not have any direct evidence beyond our own school's experience of whether or not the number of applicants for Oxbridge and Medicine have risen or specifically if the number of STEM application have risen, but in our own school, whereas last year 116 Oxbridge and medical applications have been submitted, this year the final figure, whilst not yet available, has already exceeded that and is like to be around 135. We certainly have direct evidence from feedback on the medical outreach events that pupils understand the processes better and feel more confident in making applications, and the partnership with a prestigious provide like Imperial College was extremely valuable in this undertaking and is one which we will continue into the legacy period.

How your project has contributed to the overall aims of LSEF

- Aims I and II of the fund are those which have been addressed most fully by PLASMA-T. The cultivation of excellence in teaching knowledge – and confidence – has been apparent, particularly in Primary Computing teaching and Secondary Maths Teaching and, to a lesser extent (owing to a smaller intervention group) in Secondary Computing teaching. Self-supporting school-to-school and peer-to-peer initiatives are poised to continue into the legacy period and the creation of new resources to raise achievement in the priority subjects of Computing and Mathematics has happened and these resources will continue to be accessible via the PLASMA-T portal in the legacy period of the project. Aim II has also been met, although to a lesser extent. Evaluation of impact and benefit has informed the scope and compass of our offering, enabling us to tailor make courses and resources suited to the needs of our partners and this, for us, has been the greatest benefit of the evaluation process which we have undertaken. We have also to some extent addressed Aim IV; St Olave's remains a beacon of excellence both within the capital and the country at large and, albeit not in conjunction with our LSEF activities, we have undertaken a range of international partnerships with top performing schools in India, China and Europe in order to foster an international culture of the sharing of best practice and to raise the profile of teaching in London and the UK by undertaking an enhanced programme of pupil and teacher exchange which is beginning to bear considerable fruit – further details of this are available on request. In a more immediate and project-focused way, we have fostered cultural change and helped to raise expectations through our range of outreach initiatives across a range of STEM strands and via other means (e.g. OTP and the broader Oxbridge/Harvard agenda). The PLASMA-T project has contributed very directly and in a demonstrable fashion to all four of the overall aims of the LSEF (particularly with our focus on the Mayor's "crunchy" subjects!)

Whether findings support the hypothesis of the LSEF

- The findings of our project clearly support the hypothesis of the LSEF that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment (demonstrable through impact data), subject participation (less demonstrable through data collected, but much of the impact of our work with primary schools in this area will only be felt years down the line) and aspiration (less tangible to quantify, but qualitative data certainly supports this claim).

What our findings say about the most relevant meta-evaluation theme

- Our project responded to some extent to all five themes, but the most relevant area was probably "stretch in primary schools". As the project turned out to be so demand-driven, this is certainly where the greatest need for focus and support was identified and where the greatest proportion of our resource was ultimately deployed. Our project certainly highlighted that primary students enjoy and feel a sense of achievement in learning new and challenging material in STEM subjects and that there is a great appetite – and aptitude – for developing computational thinking. On a personal note, some of the most satisfying times for me as project leader were the times when I got to go into schools and see my colleagues delivering material on algorithms and programming languages to children who were unfamiliar with the vocabulary (let alone the concepts) at the start of the day, and yet who by the end were happily and confidently programming traffic lights, robots and jam-sandwich making machines (imaginary ones!) and using impressive levels of technical vocabulary. Attending such sessions in the schools of primary partners in areas of relative deprivation within the borough (such as St Mary's Cray Primary) proved particularly invigorating and exciting to see. What it suggested very strongly is that irrespective of starting points and whatever personal challenges the young people of our borough face in their lives, they like to learn, they want to succeed and they take a pride in their sense of progression. Specifically they love Computing when it is brought to them in an accessible way. The other gratifying part of observing this stretch in action was seeing how putting our delivery team in the classrooms of our partner school could readily foster confidence in non-specialist teachers who have not had to deliver lessons on computational thinking before.

10. *Value for Money*

A value for money assessment considers whether the project has brought about benefits at a reasonable cost. Section 5 brings together the information on cost of delivery which will be used in this section.

10.1 Apportionment of the costs across the activity

Please provide an estimate of the percentage of project activity and budget that was allocated to each of the broad activity areas below. Please include the time and costs associated with planning and evaluating those activity areas in your estimates.

Broad type of activity	**Estimated % project activity**	**£ Estimated cost, including in kind**
Producing/Disseminating Materials/Resources	Educational Equipment and marketing detail from budget	£60,178.25
Teacher CPD (face to face/online etc)	Participant cost detail from budget	£110,051.57
Events/Networks for Teachers	(19/37 events) – direct staff cost detail from budget	£74,266.51
Teacher 1:1 support	n/a	n/a
Events/Networks for Pupils	(18/37 events) – direct staff cost detail from budget	£71,354.01

Others as Required – Please detail in full	All other budgetary items not including marketing, purchase of robotics and computing equipment, direct staff costs and participant costs (see separate budget sheet).	£85,651.45
TOTAL	100%	£ 401,501.80

Please provide some commentary reflecting on the balance of activity and costs incurred: Would more or less of some aspects have been better?

Much of the staffing cost has gone on direct outreach with students and with colleagues, for which the split has been relatively even between the two. Other key areas of the staffing cost have been leadership, administration and production of resources. A lot of time has been invested in the creation of good quality Computing resources at primary and secondary level. The box for Materials/resources has also included the cost of purchasing hardware such as computers and robotics kits, without which it would have been impossible to run various of the initiatives undertaken. We feel that the apportionment of costs across the different types of activities was appropriate to the needs of the project and its intended outcomes.

10.2 Commentary of value for money

Please provide some commentary reflecting on the project's overall cost based on the extent to which aims/objectives and targets were met. If possible, draw on insight into similar programmes to comment on whether the programme delivers better or worse value for money than alternatives.

To a large extent the aims and objectives of the project were met: confidence and attainment was improved (significantly in some areas) across a large number of targeted beneficiaries within a broad and diversified intervention group. The work on computing, robotics and mathematics has without doubt been the best value for money, and the outlay in particular on computing and robotics hardware which will enable ongoing outreach initiatives with partner schools in the legacy period will continue to represent good value for money until such time as the equipment is fully depreciated. In any case, the value of the funding is as much in the fostering of sustainable networks with partner schools which will continue into the legacy period. Some of this will be enabled by other funding streams (such as SCHOLA and, if our bid is successful, through the Maths Hub application), some, it is anticipated, may ultimately prove self-funding (such as the ongoing work on delivering OTP) and some of it will be delivered at ongoing cost to the school, albeit with the PLASMA-T injection of funding acting as seed money for hardware and the establishment of systems which will enable ongoing events with partner schools (such as the Saturday Computer Club, the Robotics Festivals/Clubs (including PARC) and the ongoing support of STEP students and Medics from other local schools.

10.3 Value for money calculations

Note: This section is only required for projects with control or comparison groups

In order to demonstrate the cost effectiveness of the project we would like those projects who had control or comparison groups to provide some value for money calculations. Further guidance will be issued to support projects with this.

11. Reflection on project delivery

This section is designed to allow for a discussion of wider issues relating to the project. (maximum 1,500 words)

Please include reflection on the following:

11.1 Key Enablers and Barriers to Achievement

- *Were there internal and/or external factors which appear to have had an effect on project success, and how were these responded to (if applicable)?*

The key factor for successful engagement of secondary partners, particularly with multiple dosage initiatives taking place during the school day (such as OTP which relies on being able to observe colleagues teaching and therefore must take place during the working day) is releasing colleagues. Senior Leadership of some partner schools was unwilling to release colleagues on this basis and in some cases colleagues themselves were reluctant to miss teaching time for such programmes, despite the obvious benefits of participation and despite the cost of participation being removed. Where possible, we overcame this by making events twilights (as with most of the secondary computing training sessions for teachers. This was the most significant barrier to entry/achievement which we faced.

Other more simple barriers to entry were overcome with simple expedients (e.g. participation of primaries involved in certain out of school initiatives in which transport was an issue – we collected and delivered pupils to the events by minibus where possible. This was generally only the case for schools from areas of comparative social deprivation within the borough where parents were unable to deliver pupils directly to us and/or where the school did not have its own transportation options).

- *What factors need to be in place in order to improve teacher subject knowledge?*

As above, willingness of senior leads to release colleagues during the working day, fostering a culture in which colleagues in some partner schools feel able to participate in training events during the school day, recognising that the long term benefit to teaching practice will ultimately outweigh the short term loss in terms of teaching time.

11.2 Management and Delivery Processes

- *How effective were the management and delivery processes used?*

By and large, very effective. Management and administration worked very closely with the delivery team throughout the term of the project and had regular meetings across all strands. The greatest failing in this area was in the fact that we did not procure evaluation data from certain key initiatives (e.g. PARC and the outreach work with Sevenoaks schools) – this situation was exacerbated by serious illness of the Project's Coordinating Administrator and personnel change during Year 2.

- *Were there any innovative delivery mechanisms and what was the effect of those?*

As referred to in Section 12, the most innovative development was running events in which both pupils and staff were able to benefit simultaneously (pupils by direct teaching from specialists, staff by observing and team teaching for pedagogic development). This happened primarily in the primary computing strand although also to some extent during the Year 5 Maths and Science days and during Primary Science week. Involvement of prefect assistants in the running of events also proved a valuable delivery technique which is discussed elsewhere in this evaluation.

- *Did the management or delivery mechanisms change during the lifetime of the project and what were the before or after effects?*

Yes - we started using the model described in the bullet above to great effect and having hit upon this strategy used it as much as possible.

11.3 Future Sustainability and Forward Planning

- *Do you have any plans for the future sustainability of your projects?*

Yes. As stated elsewhere in this evaluation document, we will continue to work closely with key partners on a range of initiatives including the Saturday Computing club, the Robotics Festival, the Maths and Science Days and the Science week, the Oxbridge, Medics and Harvard Outreach events, STEP and MAT preparation and university interview sharing schemes. These we will continue to run in the legacy period irrespective of the availability of additional funding streams. The PLASMA-T portal with its wealth of specialised resources for secondary and primary and across multiple STEM strands will remain as a legacy resource for all partner schools to access. OTP will also continue to run at St Olave's, but we will be charging delegates going forward to cover our costs.

- *What factors or elements are essential for the sustainability of your project?*

If the Maths work is to be sustained and developed, particularly with reference to networking with other secondary schools in the FMN, we would be dependent to a larger extent on further revenue streams and this goal has been the focus of two recent bids for further funding (the first has resulted in a small grant from the Worshipful Company of Actuaries), the second is for the Maths Hub status for which we have applied; we are currently pending the outcome of our application.

- *How have you/will you share your project knowledge and resources?*

Through continuing outreach work where possible (see above) and through continued opportunity of access to the PLASMA-T portal.

12. Final Report Conclusion

Please provide key conclusions regarding your findings and any lessons learnt *(maximum 1,500 words)*.

Alongside overarching key conclusions, headings for this section should include:

Key findings for assessment of project impact

- *What outcomes does the evaluation suggest were achieved?*

The evaluation suggests that the key outcomes of developing teacher knowledge and confidence and pupil enthusiasm and confidence were achieved – this was particularly evident in areas where baseline levels of confidence and knowledge were low (mostly therefore in the area of computing for primary pupils and teachers – see 8.1 and 8.2 for further details). The results in terms of pupil attainment have proved harder to assess in terms of establishing longer term trends and impact on externally assessed data (e.g. GCSE or A-Level grades owing to timescale of project) and particularly as much of the focus moved onto the attainment of Primary School pupils who no longer have formal external assessment data to which we can refer (nor did they have baseline data in terms of starting points for computational thinking). Such data as we have been able to amass through before and after tests and questionnaires though does suggest that pupil knowledge has been enhanced, and a likely outcome would be enhanced attainment.

- *What outcomes, if any, does the evaluation suggest were not achieved or partly achieved?*

Wider school outcomes focusing on embedding cultural change have only been partially achieved, but these are probably the hardest to realise during the limited timescale available. It is hoped that with sustained engagement with partner schools in the legacy period that a culture in which knowledge and best practice continue to be shared will continue to develop, particularly if we are able to progress with our Maths Hub work.

- *What outcomes, if any, is there too little evidence to state whether they were achieved or not?*

As above, attainment data for pupils has proved hard to collate in support of the conclusions drawn, but we remain confident that enhanced attainment will be a likely outcome of demonstrably enhanced levels of confidence and knowledge.

Key lessons learnt for assessment of project delivery

- *What activities/approaches worked well?*

Active approaches which put the onus on beneficiaries to engage and do – whether teachers or pupils. The most fruitful activities were often those in which one of our delivery team worked directly with a class of pupils whilst those pupils' teacher either watched or team taught, so that pedagogy, confidence and subject knowledge for the teacher was developed simultaneously with that of the pupils. Feedback from events such as the medics' workshops cited some of the more active diagnostic tasks and interview discussion group sessions as being amongst the most beneficial. As is often the case though, the most beneficial (like the small group interview workshops) are sometimes the more resource intensive, but at least with initiatives such as this, and those in which our prefects assisted staff with outreach, the cost can be mitigated by student involvement, and student delivery has a knock on benefit in terms of the skills and confidence of those assisting with the delivery; an unplanned bonus of some of the sessions which we were able to run.

- *What activities/approaches worked less well?*

(Oxbridge information evening, Harvard outreach evening) often only really came alive for the participants during the interactive Q&A sessions at the end. It was not just content/delivery style though that affected efficacy – timing was also crucial. Many colleagues were unwilling or unable to secure the necessary time off during the school day to participate in initiatives such as OTP, and attendance at twilight initiatives was far better for one offs rather than for CPD in which the "dosage" ran over a series of sessions. Many colleagues who we tried unsuccessfully to engage in repeat initiatives cited either pressures of work or their school's unwillingness to release them during the working day as reasons for not engaging with the fullest extent of relevant initiatives on offer. This tendency was particularly pronounced amongst secondary school colleagues. In primary schools, the greater challenge was in securing multiple teachers from one school at the same time, as cover was often harder to obtain than in secondaries. Twilights were a necessity for running initiatives with multiple colleagues from one primary school partner.

- *What difficulties were encountered in delivery and how could they be mitigated in the future?*

As stated elsewhere, one of the greatest difficulties in delivery was, particularly in the first year of the project, getting colleagues to engage, especially in what had suddenly become a very supply-saturated market for CPD. As suggested in the interim evaluation, a more holistic, centralised and coordinated approach to marketing CPD initiatives in particular would have been beneficial. The other key issue, as stated elsewhere, was the challenge of getting colleagues to attend initiatives which, owing to their nature, had to run during the school day (i.e. OTP). It is hard to imagine how this challenge might be mitigated by anything other than cultural change within the individual schools who were reluctant to release their staff for these sessions.

- *Were there any additional or unintended benefits (e.g. increases in student attendance as a result of an intervention aimed at teachers)?*

Using students to assist with delivery was a great unplanned benefit. Not only did it develop their skills and confidence with the material which they were delivering to younger students, some expressed an interest in teaching as a result, and using alumnus power as a long term strategy to fill a potential skills gap in STEM subject in years to come is a long term strategy which our school is very actively pursuing. Although it will be some years before we can assess the outcome, it is hoped and believed that PLASMA-T has assisted us with delivering on this agenda.

Informing future delivery

- *What should the project have done more of?*

As above, working simultaneously with pupils and teachers. Also we should have got to work earlier on the cross over benefits of programming and robotics.

- *What should the project have done less of?*

Relying solely on questionnaires to amass impact data.

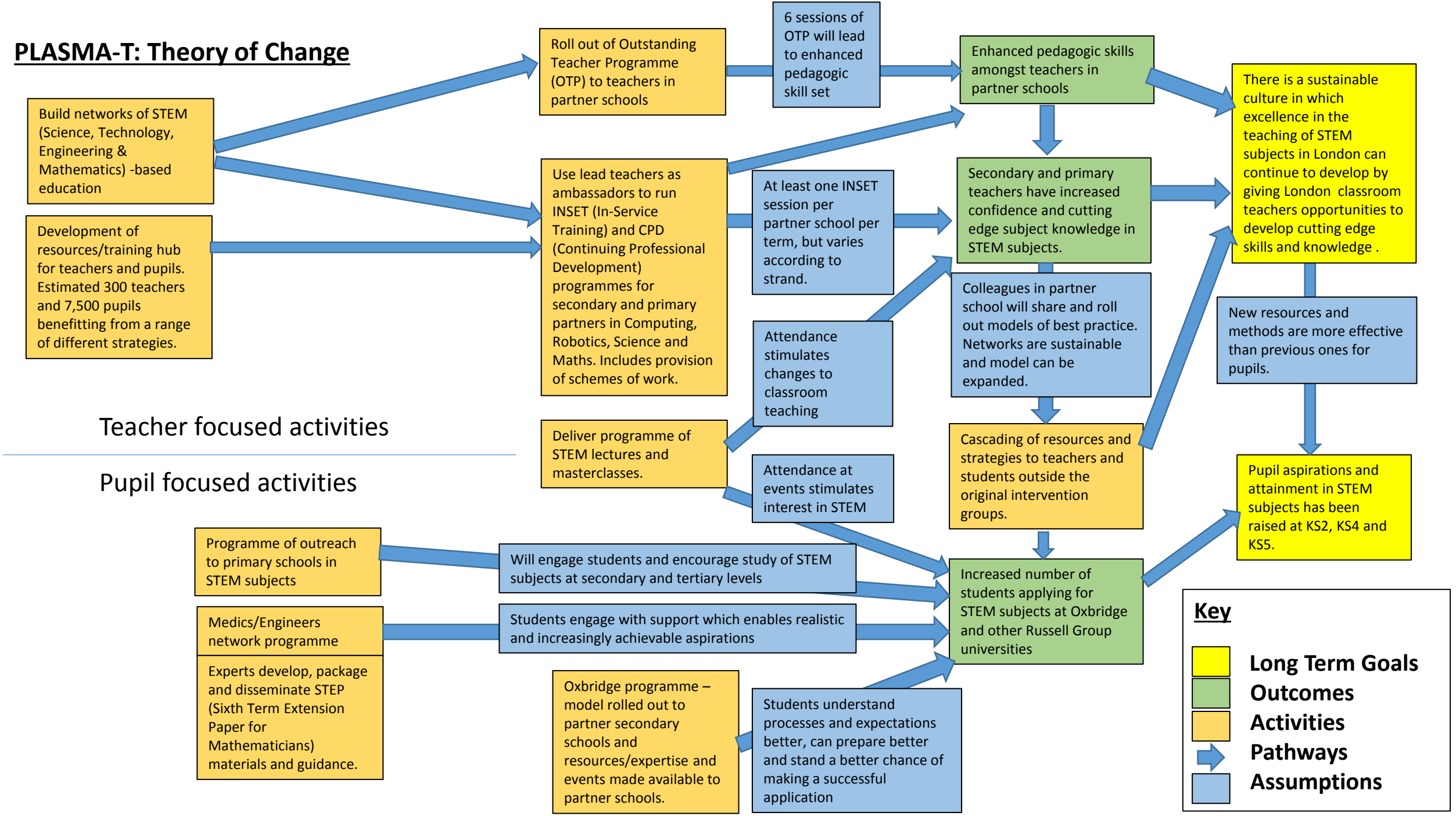
- *What recommendations would you have for other projects regarding scaling up and/ or replicating your project?*

Work with pupils and teachers simultaneously to maximise the benefit of your initiatives where possible.

Use student support where possible to assist with costs of delivery and foster further aspiration and confidence.

Look for further cross curricular benefits, particularly when working with primary partners who do not have so much curriculum time to work with robots and/or computing as is often embedded in the secondary curriculum.

PLASMA-T: Theory of Change



LSEF: PLASMA-T - Evaluation Framework

yellow shaded boxes denote key impact-focused evaluation indicator

Pupil data to be divided into subgroups: LAC, FSM, Ever6, EAL, gender, ethnicity, SEN/SA+, started current key stage -/@/+ expectation. Each pupil must have an individual identifier (suggest alphanumeric) and date of intervention beginning/ending. Where possible, use schools with more than one form entry per year to establish comparison groups.

Teacher data must be divided into subgroups: NQT, 3yrs+, Primary/Secondary. These are to be expressed as %ages of whole group. Each teacher must have an individual identifier (suggest alphanumeric) and date of intervention beginning/ending.

			What change are you hoping to achieve?	SMART activities to achieve outcomes	How do you know you've achieved outcomes?	Measuring current situation before project starts	Data to assess whether outcomes/outputs have been achieved	Completed by?
Outcomes framework area	**Strand**	**Primary/ Secondary**	**Outcomes**	**Outputs**	**Indicators**	**Baseline Data**	**Impact Data**	**Timeframe**
Pupil	Computing/ Programming	Primary	Increased level of attainment	Outreach programme comprising course of visits to partner schools.	Improved performance in bespoke tests (no NC level data available). Closing of attainment gaps between different groups (N.B. RAISE online can assess general progress by group, but would not be able to break down by subject).	Assessed level of intervention groups (and, where available, comparison groups) at start of programme. No previous performance data available.	Assessed level of intervention groups (and, where available, comparison groups) on completion of programme including % gaps between relative performance of sub groups). No previous performance data available to establish trend.	To run from summer 2014 to summer 2015.
Pupil	Computing/ Programming	Secondary	Increased level of attainment	Outreach programme comprising course of visits to partner schools.	Improved performance in bespoke tests and GCSE grade data. Closing of attainment gap between different groups.	Assessed level of intervention groups (and, where available, comparison groups) at start of programme. No previous performance data available.	Assessed level of intervention groups (and, where available, comparison groups) on completion of programme including % gaps between relative performance of sub groups). No previous performance data available to establish trend.	To run from summer 2014 to summer 2015.
Pupil	Computing/ Programming	Secondary	Increased level of take up	Outreach programme comprising course of visits to partner schools.	More students take Computing at A-Level (in partner schools which offer this subject on their curriculum).	Previous 3 year data for A-Level computing uptake from all network participants to establish trend (NB many partners may not have previously offered computing at A Level). Also conduct straw poll of those planning to take A-Level Computing at end of Year 10 (Summer 2014). To collect data from comparison group where available.	Year 11 Options data at end of KS4 (Spring/summer 2015) and to contrast impact groups with comparison group where comparison group is available.	To be measured in summer 2014 and summer 2015
Teacher	Computing/ Programming	Primary	Increased subject knowledge	CPD/INSET events and programmes with partner schools	Improved performance in tests and questionaires (to be taken by all teachers involved in intervention)	Data to be collated from individual teachers from pre-intervention	Data to be collated from individual teachers post-intervention.	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Computing/ Programming	Primary	Increased confidence	CPD/INSET events and programmes with partner schools	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Computing/ Programming	Primary	Increased subject-specific pedagogy	CPD/INSET events and programmes with partner schools	Improved teaching performance in observed lessons (enhanced percentage of good/outstanding)	Standards assessed pre-intervention	Standards assessed post-intervention	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Computing/ Programming	Secondary	Increased subject knowledge	CPD/INSET events and programmes with partner schools	Improved performance in tests and questionaires (to be taken by all teachers involved in intervention)	Data to be collated from individual teachers from pre-intervention	Data to be collated from individual teachers post-intervention.	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Computing/ Programming	Secondary	Increased confidence	CPD/INSET events and programmes with partner schools	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Computing/ Programming	Secondary	Increased subject-specific pedagogy	CPD/INSET events and programmes with partner schools	Improved teaching performance in observed lessons (enhanced percentage of good/outstanding for schools still using Ofsted descriptors to assess teaching and learning)	Standards assessed pre-intervention	Standards assessed post-intervention	CPD/INSET events to run from summer 2014 to summer 2015.
Wider School System	Computing/ Programming	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	Network events and online resources to roll out models of best practice	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resource hubs.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	To track and summatively assess in summer 2015
Wider School System	Computing/ Programming	Secondary	Embedding of cultural change and resource usage beyond the immediate intervention group	Network events and online resources to roll out models of best practice	Inclusion of model/programme in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	To assess in summer 2015
Wider School System	Computing/ Programming	Both	Teachers/schools outside of initial intervention group increase subject knowledge	Network events and online resources to roll out models of best practice	Increased number of teachers/schools outside of initial intervention group improve subject knowledge because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	To assess in summer 2015
Teacher	Generic	Secondary	Increased confidence and pedagogic skills	Outstanding Teacher Programmes (OTP) - dosage = 6 sessions per course.	Improved perception of confidence and pedagogic skills from post-intervention survey.	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	1st course to run in summer 2014. Courses termly thereafter.
Wider School System	Generic	Primary/ Secondary	Higher level of aspiration for students in STEM subjects for all partner schools involved in PLASMA-T	Various other project activities	Summative commentary outlining holistic impact of project from a whole school perspective (and likelihood of sustainable impact).	Various other areas of baseline data.	Various other areas of impact data.	Summative assessment to be conducted in July 2015.
Pupil	Maths/STEP	Secondary	Increased levels of attainment at Further Mathematics AS and A2	Further Maths students to be taught by lead teachers who have been identified/trained through the further maths network.	Improved performance at Further Mathematics from pupils in partner schools.	Performance data for previous cohorts of Further Mathematics at partner schools and ALPS data per student for Further maths for those in intervention groups.	Performances of intervention groups in Further Maths at AS and A2.	To run from summer 2014 to summer 2015.

Pupil	Maths/STEP	Secondary	Increased levels of attainment at STEP	Cambridge applicants from partner schools to attend STEP classes at St. Olave's/ PLASMA-T hub	Improved performance at STEP	Scores from practice paper pre-intervention	Scores from practice papers post-intervention and outcomes in Summer 2015 STEP exams	To run from summer 2014 to summer 2015.
Pupil	Maths/STEP	Primary	Increased level of attainment.	Outreach programme comprising course of visits to partner schools.	More pupils gain levels 5 and 6 in Mathematics at KS2.	Assessed level of intervention groups (and, where available, comparison groups) at start of programme. Previous performance data to establish trend/individual rates of progress.	Assessed level of intervention groups (and, where available, comparison groups) on completion of programme including % gaps between relative performance of sub groups). Previous performance data to assess trends.	To run from summer 2014 to summer 2015.
Pupil	Maths/STEP	Secondary	Increased participation and attainment in JMC	INSET beneficiaries to prepare students for JMC.	Increased participation and attainment in JMC amongst partner schools.	Current participation/attainment rate at JMC in partner schools.	Post-intervention participation/attainment rate in partner schools.	To run from summer 2014 to summer 2015.
Pupil	Maths/STEP	Secondary	Increased participation and attainment in Olympiad	INSET beneficiaries to prepare students for Olympiad.	Increased participation and attainment in Olympiad amongst partner schools.	Current participation/attainment rate at Olympiad in partner schools.	Post-intervention participation/attainment rate in partner schools.	To run from summer 2014 to summer 2015.
Teacher	Maths/STEP	Secondary	Increased confidence, subject knowledge and pedagogic skills for teachers of Further Mathematics	Further Maths teachers to experience INSET at St. Olave's rolled out through the further maths network.	Improved perception of confidence and pedagogic skills from post-intervention survey.	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	To run from summer 2014 to summer 2015.
Teacher	Maths/STEP	Primary	Increased subject knowledge and greater confidence	Primary school teachers to benefit from INSET programme.	Improved perception of confidence and pedagogic skills from post-intervention survey.	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	To run from summer 2014 to summer 2015.
Teacher	Maths/STEP	Secondary	Confident/able to prepare/submit students for JMC	INSET programme and resource sharing.	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Maths/STEP	Secondary	Confident/able to prepare/submit students for Olympiad	INSET programme and resource sharing.	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Maths/STEP	Secondary	Increased subject knowledge re STEP	Creation and sharing of resource hub and SoW for other schools to use + access to trouble-shooting/CPD events for sharing best practice.	Improved scores in questionaires (to be taken by all teachers involved in intervention)	Data to be collated from individual teachers from pre-intervention	Data to be collated from individual teachers post-intervention.	To create and enable access to resource hub in summer 2014
Teacher	Maths/STEP	Secondary	Increased confidence teaching STEP	Creation and sharing of resource hub and SoW for other schools to use + access to trouble-shooting/CPD events for sharing best practice.	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	To create and enable access to resource hub in summer 2014
Wider School System	Maths/STEP	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	Termly CPD event/conference for teachers in partner schools offering STEP.	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resource hubs.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	To create and enable access to resource hub in summer 2014 and host LGSN meeting in March 2014 with STEP provision on the agenda.
Wider School System	Maths/STEP	Secondary	Embedding of cultural change and resource usage (re STEP and Further Maths) beyond the immediate intervention group	Network event with LGSN in 2014 and 2015 for sharing best practice.	Inclusion of model/programme in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	To create and enable access to resource hub in summer 2014 and host LGSN meeting in March 2014 with STEP provision on the agenda.
Wider School System	Maths/STEP	Secondary	Teachers/schools outside of initial intervention group increase subject knowledge	Network events and online resources to roll out models of best practice	Increased number of teachers/schools outside of initial intervention group improve subject knowledge because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	To create and enable access to resource hub in summer 2014 and host LGSN meeting in March 2014 with STEP provision on the agenda.
Pupil	Medical	Secondary	Increased level of conversion rates (application:offer) for medical applicants	Medics' networking events (two in summer 2014, two in summer 2015. For each summer one event will target Years 10 & 11, the other will target Year 12). External HE providers secured (Imperial) + opportunities for student medical applicants and key teaching staff to share good practice.	Increased level of conversion rates (application: offer) for medical applicants in partner schools. Also increased number of applications.	Converstion rates (and annual number of applications) of partner schools pre-intervention	Conversion rates (and annual number of applications) of partner schools post-intervention	Network events in June 2014 and June 2015. Booklet/online resource available for consultation summer 2014, to be updated in 2015.
Teacher	Medical	Secondary	Increased level of confidence for teachers supporting students' medical applications	Medics' networking events (see above) + sharing of bespoke booklet/online resource on supporting medical applicants (including advice on good UCAS references, personal statements, quirks of individual providers, interview questions, Medics' elective SoW advice for preparation for BMAT, UKCAT and interview).	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	Network events in June 2014 and June 2015. Booklet/online resource available for consultation summer 2014, to be updated in 2015.
Wider School System	Medical	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	2x Medics' networking events (Years 10/11 and Year 12) and application advice booklet available for download	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resource hubs including post-UCAS student feedback resource.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	Network events in June 2014 and June 2015. Booklet/online resource available for consultation summer 2014, to be updated in 2015.
Wider School System	Medical	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	2x Medics' networking events (Years 10/11 and Year 12) and application advice booklet available for download	Inclusion of model/programme for local medical network hubs drawing on a blend of professional, alumnus and PA assistance in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	Network events in June 2014 and June 2015. Booklet/online resource available for consultation summer 2014, to be updated in 2015.

Wider School System	Medical	Secondary	Teachers/schools outside of initial intervention group increase subject knowledge	2x Medics' networking events (Years 10/11 and Year 12) and application advice booklet available for download	Increased number of teachers/schools outside of initial intervention group improve subject knowledge and how best to support students preparing for BMAT/UKCAT and interview (including MMI format) because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	Network events in June 2014 and June 2015. Booklet/online resource available for consultation summer 2014, to be updated in 2015.
Pupil	Oxbridge/ Russell Group	Secondary	Enhanced levels of subject expertise beyond the curriculum (in readiness for university application for STEM subjects)	HPQ/EPQ conference/ networking event for partner schools (to include scholarship evening/STEM presentation event) and roll out of HPQ/ EPA SoWs. Extended range of exemplar material of best practice will also be available.	Increased numbers of students take HPQ/ EPQ to support Oxbridge/ Russel Group applications for STEM subjects	Pre-intervention numbers of students taking HPQ/ EPQ at partner schools	Post-intervention numbers of students taking HPQ/ EPQ at partner schools. Survey re value of event.	Conferences in Summer 2014 and Summer 2015
Pupil	Oxbridge/ Russell Group	Secondary	Students (and parents) develop confidence and understanding re Oxbridge (and RG) application processes	Oxbridge evening - presentations + Q&A session with admissions tutors and staff from both universities (April 2014 and March 2015)	Increased conversion ratio (application: offer) for Oxbridge applicants at partner schools (not just limited to STEM subjects)	Pre-intervention conversion rates re Oxbridge (applications:offers) at partner schools (to analyse both STEM and all subject performance)	Post-intervention conversion rates re Oxbridge (applications:offers) at partner schools (to analyse both STEM and all subject performance)	Evening events in April 2014 and March 2015.
Teacher	Oxbridge/ Russell Group	Secondary	Teachers develop confidence and understanding re Oxbridge (and RG) application processes.	Oxbridge evening - presentations + Q&A session with admissions tutors and staff from both universities (April 2014 and March 2015) + staff only twilight INSET event in September 2014 focussing on reference writing, interview practice and support for admissions tests.	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	Student/staff evening events in April 2014/March 2014. Staff event in September 2014.
Wider School System	Oxbridge/ Russell Group	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	Oxbridge evening - presentations + Q&A session with admissions tutors and staff from both universities (April 2014 and March 2015) + staff only twilight INSET event in September 2014 focussing on reference writing, interview practice and support for admissions tests.	Growing attendance at network events including Oxbridge evening (2nd April 2014 and March 2015) and HPQ/EPQ scholarship events (STEM focus - Summer 2014 and 2015). Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resource hubs inlcuding interview feedback data.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	Student/staff evening events in April 2014/March 2014. Staff event in September 2014. Online resources available via online PLASMA-T hub summer 2014
Wider School System	Oxbridge/ Russell Group	Secondary	Embedding of cultural change and resource usage beyond the immediate intervention group	Oxbridge evening - presentations + Q&A session with admissions tutors and staff from both universities (April 2014 and March 2015) + staff only twilight INSET event in September 2014 focussing on reference writing, interview practice and support for admissions tests.	Inclusion of model/programme in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	Student/staff evening events in April 2014/March 2014. Staff event in September 2014. Online resources available via online PLASMA-T hub summer 2014
Wider School System	Oxbridge/ Russell Group	Secondary	Teachers/schools outside of initial intervention group increase subject knowledge	Oxbridge evening - presentations + Q&A session with admissions tutors and staff from both universities (April 2014 and March 2015) + staff only twilight INSET event in September 2014 focussing on reference writing, interview practice and support for admissions tests.	Increased number of teachers/schools outside of initial intervention group improve subject knowledge to support Oxbridge/RG applications because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	Student/staff evening events in April 2014/March 2014. Staff event in September 2014. Online resources available via online PLASMA-T hub summer 2014
Pupil	Science	Primary	KS2 students develop enthusiasm/ confidence re science	KS2 science activity days (summer 2014 and summer 2015) with partner primary schools	Increased number of schools participating in Science activity days and improved scores relative to pre-intereVntion confidence surveys.	Current (pre-2014) number of attendees at KS2 Science days and pre-intervention levels of pupil confidence.	Summer 2014 and summer 2015 number of attendees and post-intervention levels of pupil confidence.	KS2 science activity days (summer 2014 and summer 2015) with partner primary schools
Teacher	Science	Primary	KS2 teachers develop confidence and expertise re teaching science	CPD/INSET events and programmes with partner schools	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Science	Secondary	Secondary teachers develop confidence and expertise re teaching science	CPD/INSET/networking events and programmes with partner schools (tie in with OTP) and sharing of online/VLE resources	Improved scores from pre-intervention confidence surveys	Scores collected from individual teachers from pre-intervention confidence surveys	Scores collected from individual teachers from post-intervention confidence surveys	CPD/INSET events to run from summer 2014 to summer 2015. Online/VLE resources uploaded to PLASMA-T hub summer 2014
Wider School System	Science	Primary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	CPD/INSET events and programmes with partner schools	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resrouce hubs.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	CPD/INSET events to run from summer 2014 to summer 2015.
Wider School System	Science	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	CPD/INSET/networking events and programmes with partner schools (tie in with OTP) and sharing of online/VLE resources	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resrouce hubs.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	CPD/INSET events to run from summer 2014 to summer 2015. Online/VLE resources uploaded to PLASMA-T hub summer 2014
Wider School System	Science	Secondary	Embedding of cultural change and resource usage beyond the immediate intervention group	Sharing of online/VLE resources	Inclusion of model/programme in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	Online/VLE resources uploaded to PLASMA-T hub summer 2014
Wider School System	Science	Both	Teachers/schools outside of initial intervention group increase subject knowledge	Sharing of online/VLE resources. Partner schools create their own hubs to cascade best practice.	Increased number of teachers/schools outside of initial intervention group improve subject knowledge because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	CPD/INSET events to run from summer 2014 to summer 2015. Online/VLE resources uploaded to PLASMA-T hub summer 2014

Pupil	Technology/ Robotics	Primary	Increased level of attainment	Outreach programme comprising course of visits to partner schools to develop SoW re VEX IQ	Performance in bespoke tests (and NC levels/sublevels at KS2 where available). Closing of attainment gaps between different groups	Assessed level of intervention groups (and, where available, comparison groups) at start of programme. Capture attainment data for previous 3 year groups for trend data. % point gaps between attainment of different sub-groups for intervention group (and, where available, comparison group).	Assessed level of intervention groups (and, where available, comparison groups) on completion of programme, including % point gaps between relevant performance of subgroups. N.B. Prior attainment data is likely to be limited.	To run from summer 2014 to summer 2015.
Pupil	Technology/ Robotics	Secondary	Increased level of attainment	Outreach programme comprising course of visits to partner schools to develop SoW re VEX Robotics.	Performance in bespoke tests and GCSE grade data. Closing of attainment gap between different groups.	Assessed level of intervention groups (and, where available, comparison groups) at start of programme. Capture attainment data for previous 3 year groups for trend data. % point gaps between attainment of different sub-groups for intervention group (and, where available, comparison group).	Assessed level of intervention groups (and, where available, comparison groups) on completion of programme, including % point gaps between relevant performance of subgroups.	To commence with ten schools from summer 2014.
Pupil	Technology/ Robotics	Secondary	Increased level of take up	Outreach programme comprising course of visits to partner schools to develop SoW re VEX Robotics.	More students take Design Technology at A-Level	Previous 3 year data for A-Level DT uptake from all network participants to establish trend. Also conduct straw poll of those planning to take A-Level DT at end of Year 10 (Summer 2014). To collect data from comparison group where available.	Year 11 Options data at end of KS4 (Spring/summer 2015) and to contrast impact groups with comparison group where comparison group is available.	To commence with ten schools from summer 2014.
Teacher	Technology/ Robotics	Primary	Increased subject knowledge, confidence and subjects-specific pedagogy	CPD/INSET events and programmes with partner schools	Improved performance in tests and questionaires (to be taken by all teachers involved in intervention)	Data to be collated from individual teachers from pre-intervention	Data to be collated from individual teachers post-intervention.	CPD/INSET events to run from summer 2014 to summer 2015.
Teacher	Technology/ Robotics	Secondary	Increased subject knowledge, confidence and subjects-specific pedagogy	CPD/INSET events and programmes with partner schools	Improved performance in tests and questionaires (to be taken by all teachers involved in intervention)	Data to be collated from individual teachers from pre-intervention	Data to be collated from individual teachers post-intervention.	CPD/INSET events to run from summer 2014 to summer 2015.
Wider School System	Technology/ Robotics	Secondary	Partner schools use network opportunities to enhance teaching practice/ pupil outcomes. Network is sustainable in nature.	CPD/INSET events and programmes with partner schools	Growing attendance at network events. Increased number trained as lead partners to extend network/ cascade good practice.	Number of teachers at partner schools involved in network/ hub events in previous 12 months. Number of trained lead partners pre-intervention. Number of schools actively working together pre-intervention. Establish status of online resrouce hubs.	Number of teachers at partner schools involved in network/ hub events following intervention. Number of trained lead partners post-intervention. Number of schools actively working together post-intervention. Review status and usage of online resource hubs.	CPD/INSET events to run from summer 2014 to summer 2015.
Wider School System	Technology/ Robotics	Secondary	Embedding of cultural change and resource usage beyond the immediate intervention group	Promotion of VEX/SoW and Teach Design training to wider audience	Inclusion of model/programme in development plans of non-partner schools.	Development plans pre-roll out.	Development plans post roll-out. Track development of level of online usage. User feedback on quality of resources through online surveys.	Ongoing and concurrent with Teach Design's LSEF project
Wider School System	Technology/ Robotics	Both	Teachers/schools outside of initial intervention group increase subject knowledge	Promotion of VEX/SoW and Teach Design training to wider audience. Dedicated part on online PLASMA-T hub to relate to VEX SoW/Teach Design support.	Increased number of teachers/schools outside of initial intervention group improve subject knowledge because of PLASMA-T	Schools/teachers accessing resources/CPD material/network events prior to interventions.	New courses/ resources/ material accessed by teachers/schools outside of immediate intervention group. Online surveys assess value.	Ongoing and concurrent with Teach Design's LSEF project