Raising RA3

2010

RA3: Raising Attitudes Achievements and Aspirations

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Executive Summary

The primary evidence presented within this report was gathered from focus group interviews with parents and pupils and semi-structured interviews with participating secondary and primary school teachers. The evaluation explored perceptions of the RA3 programme with specific emphasis on gauging attitude changes to Science, Technology, Engineering and Maths (STEM), and the perceived quality of activities and processes and the impact upon the participants.

There was an overwhelmingly positive response from all participants towards the programme as a whole. Parents were particularly enthusiastic about GDOs and felt that the organisation and venues for the Grand Days Out (GDOs) promoted and encouraged further participation in the programme.

Parents requested access to information that would help to develop their understanding of school processes, classroom teaching and the curriculum, as well as information on specific subjects such as science and maths.

Parents particularly highlighted the programme as an effective approach to transition from primary to secondary and for encouraging family units to work and learn together within an informal and fun environment.

Pupils placed value on working collaboratively with parents which enabled them to demonstrate individual abilities and creativity to their parents.

Pupils described GDOs as supporting their school-based work and providing real contexts for specific topics.

Pupils also stated that they had experienced an increase in self-confidence regarding engaging with STEM both within school and outside.

Teachers stated that the Continuing Professional Development strand of the programme had supported their professional development well.

As with parents, teachers also felt that the programme provided an effective approach to managing the transition stage of children's education.

The majority of schools have attempted to embed, either the programme as a whole or various strands, particularly within their Extended Schools policy.

Evidence shows that family learning is highly valued by schools, parents and children but generally has low priority within schools.

Recommendations

CPD units should be designed and delivered to teachers that focus on developing a better understanding of family learning and the processes involved

Secondary schools should be encouraged to collaborate with all primary schools and pupil referral units in their areas to develop the RA3 model

Schools should explore the model as an effective transition approach

The utilisation of non-teaching staff, such as family links officers, as programme managers and deliverers should be explored by schools

Parents and pupils should be encouraged to access the RA3 website but more effective marketing and mechanisms for raising the RA3 profile should be explored

More education departments within Local Authorities should be made aware of the success of the programme

The potential for a national roll-out should be explored

An RA3 Associates Schools Scheme should be developed whereby schools can obtain recognition from Sheffield Hallam University for their involvement in the programme and collaboration with the university

Pupils should be rewarded for their participation by offering them 'Associate Student' status. This award should be recognised by Sheffield Hallam University

The development of parent training/information sessions should be encouraged. There is much evidence to suggest that parents would engage with sessions that provided detail about the National Curriculum; basic science and maths content; current classroom practices; current school and education policy

The potential for further study is great particularly through a targeted PhD study. Funding should be sought in order to recruit a quality post-graduate who would seek to explore the programme further while building on existing data

The development of multi-agency working should be encouraged that will enable better links to adult education provision for participating parents

1. Introduction

Family learning concerns adults and children learning together through activity that involves explicitly identified and shared learning outcomes for both. It supports parents to help their children achieve, helps to develop parents' self-confidence in working with their child as well as learning for themselves and can encourage progression into further learning.

The impact which parents can have upon their children's learning and achievement has never been more widely accepted than in recent years. Moreover, the view that parents should be intimately involved, not only in their own child's learning but in wider school issues and activity, has become a central tenet of educational policy in many countries. In England, the 1997 White Paper '*Excellence in Schools*' (DfES) set out the Labour Government's commitment to increasing parental involvement in schools. Subsequent policy documents—*Higher Standards, Better Schools for All, 2005* (DCSF*); Every Parent Matters, 2007* (DCSF), consolidated strategy and described the importance of parental involvement in raising the aspirations and achievement of children during compulsory education.

Existing evidence reinforces policy directives that identify parental involvement as a key factor in the promotion of pupil achievement and overall school performance. However, it is clear that the nature of parental involvement is complex and influenced by many variables such as, social class, ethnicity and family size. The multifaceted nature of parental involvement is further described through Epstein's (1992) useful classification of various types of parental involvement with specific regard to involvement at home as well as in school shown in Table 1:

Table 1 Epstein's Typology of Parental Involvement At Home and in School

Type	Activity/Action
1. basic parental obligations	providing positive conditions at home which support children's learning
2. basic school obligations	coverage of a range of effective school to home communications
3. parent involvement at school	attending planned school events, attending parent evenings, volunteer classroom work
4. parent involvement at home	parent, child and teacher-initiated projects
5. parent involvement in school governance and policy	providing parents with information on school policy, providing parents with a 'voice'
6. collaboration with the community	developing resources, and activities which strengthen school-home links

Other research has highlighted such activity/action as; transmission of high aspirations for children by their parents, communications between parents and children about general school issues and subject specific issues, parental participation in school-based activities, and effective parental communication with teachers about their children (Bloom, 1980; Christensen, *et al*., 1992; Stevenson, *et al.,* 1987). However, sifting through the vast array of variables that envelop parental involvement, in its many forms, is a complex task. Social class, ethnicity, and gender are some of the complex variables that have been considered within existing literature (Harris and Goodall, 2007).

Existing evidence suggests that differences related to socioeconomic status (SES) affect parental involvement. Bevins, *et al*. (2008) interviewed a range of parents from varied backgrounds and ethnicity in England, and highlighted differences in parental expectations between those from high and low SES backgrounds. They found that parents from high SES backgrounds tend to expect their children to aspire to a university education and subsequent professional career and have high expectations of their children's academic achievement generally. While, parents from low SES backgrounds encouraged their children to work hard and achieve as well as possible but did not envisage a university education for their children as a probable outcome. Research reported by the National Centre for Social Research (NCSR, 2004) echoed these findings by stating that middle class parents exhibit expectations of their

children that are not shared by working class parents. While some variations have been reported across ethnic groupings regarding parental involvement the general consensus is that children's achievement benefits from parental involvement regardless of ethnicity and/or gender (Harris and Goodall, 2007; Bevins, *et al.*, 2008).

As in the US and a number of European countries England has, over recent years, borne witness to a myriad of programmes and activities focused on involving parents more closely with children's learning and schools. However, developing programmes which effectively involve parents in their children's learning is difficult. Issues such as work commitments and child care facilities can restrict parent's ability to commit fully to engagement with school-based activity (Harris and Goodall, 2007). Furthermore, little data exists about what works effectively as evaluations of programmes have been poorly designed, particularly in mapping parental involvement against children's achievement (Desforges, *et al*., 2003).

This report provides an account, supported by evidence, of an approach to family learning which took place in South Yorkshire and involved secondary and primary schools providing stimulating activity for family units to engage with in an attempt to raise the attitudes, achievements and aspirations of both adults and children.

2. Project Background

2.1 Rationale

The South Yorkshire region of England constitutes four sub-regions—Sheffield, Rotherham, Doncaster and Barnsley, all of which have undergone significant social and structural change over recent years. The regional economy has moved away from the traditional mining and steel production industries to new industrial and commercial sectors. Greater emphasis now lies with research and development to support the use of high technology solutions which has led to an increased need for a workforce that is scientifically and technologically literate.

However, the rapid change from the former industries to the new economy is not without its problems. Many of the new and emerging employers are Small to Medium Enterprises (SMEs) that lack the capability to engage in large scale training and development schemes. As a consequence a skills gap has emerged placing pressure on regional government agencies, schools and further and higher education institutes to develop the skills and knowledge of the potential workforce with particular emphasis on STEM (Walton and Bevins, 2009).

The RA3 programme attempted to address key areas of need within the South Yorkshire region by aiming, not only to develop pupils' and parents' skills, knowledge and understanding of STEM, but also by encouraging cultural change to raise the aspirations and achievement of people in South Yorkshire. The participating schools had an important role to play in supporting these aims. By encouraging parental involvement in their children's education schools and teachers had the opportunity to contribute to parents' attitude change towards STEM and education in general. The programme also offered an opportunity for schools and individual teachers to develop relationships with parents and to challenge any preconceived notions parents may have held about their child's school/education prior to participation in the programme. This aspect of the project was particularly appealing to

schools as many of them recognised the potential for attracting identified hard to reach parents and attempting to build positive relationships.

2.2   Duration and funding allocation

The duration of the programme was initially three years beginning in September 2006 and ending in March 2009. However, an additional year was agreed between the funders and delivery organisation between April 2009 – March 2010.[1] Delivery was concentrated within school terms with holiday periods were used for additional planning and development.

The funding allocation for the original 3 year period was £960, 000. An additional £150,000 was agreed for the additional year between April 2009 – March 2010. Table 2 shows funding allocation through activity type for the initial 3 year period.

Table 2 Funding Allocation for Initial Three-Year Period

Activity	Total contracted (all Years)
Project management	177115
Materials production	231727
Web portal development & production	11382
Industrial engagement	52680
Evaluation & audit	102492
School engagement	282265
CPD delivery	74034
Launch/portal/materials	28305
Total	960000

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[1] A 1 month extension was agreed between the funders and delivery organisation which took the programme's scheduled end from March 2010 to April 2010 (inclusive).

3. Overview of delivery

3.1 Aims

- establish Family Learning Groups (FLG's) in each feeder primary of the identified secondary school or community group where appropriate

- increase pupils' achievement at KS2/3 and beyond

- increase pupils' aspirations regarding STEM study and careers

- increase parents' aspirations regarding STEM study and careers

- increase the knowledge and skills required by parents to support children's learning in addition to parents gaining work based learning skills

- provide a range of CPD opportunities for teachers and Science and Engineering Ambassador's to support the changing science curriculum and the development of new teaching methods

- increase links with industry through the delivery of industrial visits

The programme was designed to align with the Regional Economic Strategy (RES, 2006-2015) and the 'Every Child Matters' policy (Department for Education and Skills - DfES, 2003). The 'Every Child Matters' policy acknowledges that parents have a key role to play in the education of their children and that by adopting an educational model which promotes the effective integration of families and schools has great potential for raising aspirations and increasing long-term achievement for both young people and adults alike. The Yorkshire Forward commissioning document (2006) set out the background for commissioning interventions in Yorkshire and Humber and sought to respond to issues identified by Government as critical to effective STEM education provision:

One of the key issues for Yorkshire and the Humber region as a whole is raising attainment at GCSE overall – this continues to lag behind the England average for most LEAs, but the effort required to narrow the gap is not overly substantial. Specifically to STEM, the majority of LEAs in the region have fewer pupils than would be expected at GCSE that are sitting exams in Chemistry, Physics, Biology and Information Technology. However, when these subjects are taken, the rates of passes at A* - C are very high. Attainment across all LEAs needs significant improvement in the Single Award for Science. There are a small number of LEAs where particular attention to STEM attainment needs to be targeted, based on the 2004/05 GCSE results. These are Kingston-upon-Hull, North East

Lincolnshire, Bradford, Doncaster, Barnsley and Rotherham (Yorkshire Forward, 2006—STEM Commissioning Document).

Participating secondary schools were identified from all four Local Authorities (Barnsley, Doncaster, Rotherham and Sheffield) within South Yorkshire with the support of each Local Authority. Schools were identified for inclusion based on their socioeconomic context as well as their pupil attainment profiles—all participating schools are situated within an area of deprivation and had attainment profiles which were lower than the national average. Tables 3 and 4 show baseline date for each of the initial ten secondary schools and local authorities with reference to science and mathematics.

Table 3 Baseline Position for the Initial Ten Schools

Schools	pupils achieving level 5 or above in Mathematics by %	pupils unable to participate in Mathematics tests by %	pupils achieving level 5 or above in Science by %	pupils unable to participate in Science tests by %
Rossington. All Saints Church of England School	60%	2%	58%	**1%**
St Michaels Catholic & Church of England High School	79%	2 %	74%	**5%**
Kirk Balk School	69%	4%	63%	**6%**
Royston High School	66%	4%	68%	**2%**
Oakwood Technology College	75%	3%	68%	**5%**
Thrybergh Comp. School	45%	11%	43%	**11%**
Wingfield School	67%	2%	52%	**2%**
Don Valley High School	63%	8%	59%	**5%**
Balby Carr Community Sports College	60%	8%	46%	**8%**
Hinde House 3-16 School	**50%**	**10%**	**49%**	**10%**

Table 4 Baseline Position at 2006 for the 4 Local Authorities involved in the programme

LA	KS2 Level 4+ Maths	KS2 Level 4+Science	KS Level 5 Maths	KS Level 5 Science
Rotherham	73%	86%	29%	44%
Sheffield	69%	82%	26%	42%
Barnsley	70%	81%	22%	38%
Doncaster	74%	87%	29%	47%

Eleven secondary schools worked with their feeder primary schools (60 schools in total) in their area. However, although the project focus was upon 60 primary schools centred around 11 secondary school clusters; actual participation involved individuals from 151 primary schools in the SY region, 3 private schools, 26 secondary schools and, 2 special schools. Although the aim was to deliver six hour outputs, there are some individuals who engaged with the project for less than 6 hours but also many who engaged for more than 6 hours with some continuing to engage for up to 72 hours. This bears testimony to the fact that the project had become embedded in many schools and so was not seen as a simple 'one-off' engagement. Figure 1 shows the three specific strands of activity (for a complete break down of the range of activities engaged in through each strand see appendix 1).

- Grand Days Out (GDOs)

- Family Learning Groups (FLGs)

- Continuing Professional Development (CPD)

<u>Figure 1. Three Strands of Activity</u>
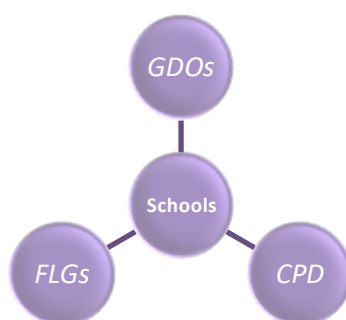
3.2   Grand Days Out

It is widely recognised (Osborne and Collins, 2000; Jenkins, 2005) that providing 'real' contexts for effective teaching and learning in STEM is highly important for the development of learner's interest and understanding. The GDOs were designed to stimulate family units through the provision of hands-on activity and interesting contexts for learning. GDOs were organised either by individual schools or the SHU team, with coaches, lunches, and admission fees (where applicable) arranged.   All schools utilised GDOs to recruit families to the programme as well as providing relevant contexts for learning. Venues for GDOs were

identified to link with themes/topics that schools had engaged with or were engaging with. A range of venues were visited from science and industrial based organisations to museums. While appendix 1 shows a complete breakdown of activity, a typical example of a GDO might be the three visits to the National Rail Museum which took place in May 2008. All participating secondary schools attended with numbers limited to 2 coaches per school. The attending families were able to engage in a facilitated tour around the exhibits, a bridge building activity, and witness carriage building.

3.3 Family Learning Groups

Each school cluster established FLGs that consisted of children plus parents/guardians and were guided by either a teacher or school liaison officer. Varying approaches were used by schools to engage FLGs from after-school clubs to dissemination events for parents.

However, all schools utilised FLGs to develop a core involvement which they successfully maintained throughout the project[2]. FLGs constituted a wide range of ages and ethnic mix, wand also a good gender balance (see appendix 2). The most effective approach to delivery of FLGs was an after-school club model. An activity would typically involve parents and children working together to problem-solve, design and make, and trial. Activities such as 'Raucous Robots' which involved the making of different style animal robots and testing attributes, were typical and effective approaches for generating collaborative learning within an informal and fun environment. FLG numbers ranged from 4 - 18 individuals.

3.4 Continuing Professional Development

Teachers were supported throughout the programme by the provision of CPD sessions. The CPD strand specifically aimed to support participating teachers to develop learning and teaching materials that schools could use to engage family groups in school-based and out of school activity. Initially, draft materials were developed by SHU academics and disseminated to the participating teachers through two short twilight sessions together with a reflective session for the teachers to review and reflect upon the materials.

A '2 + 2 + 2' model was utilised to structure CPD provision and comprised—initial introductory session of 2 hours which identified context and theme of the materials. Teachers

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[2] Acknowledging natural attrition levels and new recruits the core involvement through FLG's for most schools remained stable throughout the project.

were then able to review the materials and reflect upon them independently for a further 2 hours at school or home, before attending a final session of feedback and consolidation, again lasting 2 hours. Most sessions were delivered through twilight timings to accommodate teachers' work patterns and held at a range of venues from the SHU to individual schools. The 2+2+2 model was effective in enabling teachers to attend the sessions after school and by developing a strong reflective component in an attempt to provide teachers with greater ownership.

Following four CPD interventions a teacher-writers group was developed whereby six of the participating teachers took ownership of producing learning and teaching materials for the programme and disseminated their packages to other participating teachers through the CPD model. A pool of learning and teaching materials has now been developed and is available for teachers to download from the RA3 website.   While the materials are all STEM based it was intended that the formatting of the materials, as with the CPD model, could be used across all subjects. Appendix 3 contains a complete timeline of the programme across all four years showing the three main strands of activity.

3.5　Programme management and partners

The programme management structure demonstrated a typical but effective approach to management utilising a steering group, constituting a range of experience and expertise from the fields of family learning and STEM education, to advise and drive the programme development.　Programme partners were chosen to provide specific expertise within appropriate areas and to deliver activity central to achieving the contracted aims of the programme (see figure 2). The programme partners were:

- Business and Education South Yorkshire
- Industrial Trust
- Regional Science Learning Centre (Yorkshire and Humber)

Figure 2 Management Structure and Partners Yrs 1-3

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                    ┌──────────────────┐
                    │  Steering Group  │
                    └──────────────────┘
                              │
                    ┌──────────────────┐
                    │ Project Director/ │
                    │  SHU contractor  │
                    └──────────────────┘
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              ┌─────│ Project Manager/ │─────┐
              │     │  SHU contractor  │     │
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    ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
    │   B&ESY:     │ │ Industrial   │ │   RSLC:      │
    │              │ │ Trust:       │ │              │
    │ monitoring,  │ │ industry     │ │ CPD          │
    │ evaluation   │ │ liaison,     │ │ facilitation,│
    │ & delivery   │ │ visits       │ │ quality      │
    │ support      │ │ programme    │ │ framework    │
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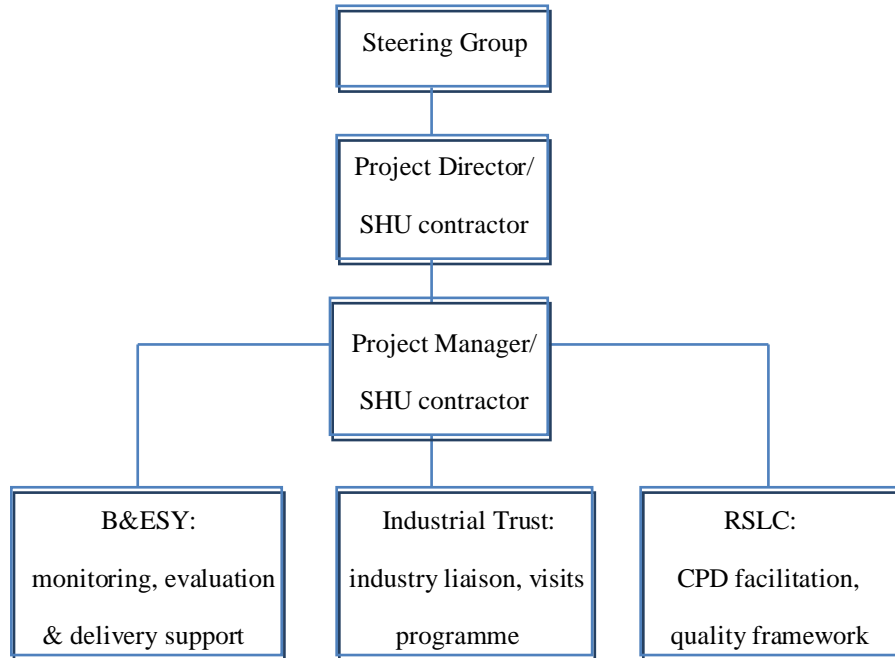
A steering group was established to provide advice and direction for the programme. The group had representation from key individuals and organisations who offered expertise relevant to the programme aims and could offer support for sustainability and best practice. Professor Charles Desforges from of Exeter University acted as independent chair to the group with other representation from:

- Project Partners (key staff)
- Yorkshire Forward
- Adult learners (NIACE)
- Local Authorities
- HE
- Community groups
- other STEM providers

After a review of the programme towards the end of year 3, a revised management structure followed. The main contractor (SHU) took over responsibility for evaluation and monitoring with B&ESY taking no further participation.

4. Methods

Empirical data were gathered to elicit participants' perceptions of the programme with specific focus on changes in attitude and quality of activity and approaches, together with the programme as a whole. Qualitative and quantitative methods (see appendix 4 for examples) were used through:

- Interviews with teachers
- Focus groups with parents
- Parent questionnaires
- Focus groups with pupils

Semi-structured interviews with teachers were conducted and data gathered as the primary source. Reflective discussions with teachers also took place with data gathered for supporting evidence. Eleven secondary school teachers and eight primary teachers were interviewed. Where possible interviews were tape-recorded and supported by researcher notes. Notes were taken throughout reflective discussions.

Focus groups with parents from each sub-region of South Yorkshire were conducted. Parents who had engaged with the programme through a minimum of two interventions were identified to take part in focus group discussions with a total of 68 parents participating. Focus groups with pupils from each sub-region also took place with a total of 53 pupils participating.

An inductive approach was used to analyse data in an attempt to condense extensive raw text data into a brief summary format. Raw data were summarised through emergent themes which were then categorised to aid pattern identification.

A rigorous reading of interview transcripts and researcher notes enabled key themes to emerge. Segments of interview text and researcher notes were coded enabling analysis of particular themes and comparisons to be made across all data.

Preconceptions during data collection and data analysis processes which can be imposed by deductive methodologies can often obscure key themes. This to say, that in a complex programme such as RA3 with many socioeconomic and educational variables there is a danger that the researcher's pre-existing models and concepts can influence data analysis to the extent that key emergent themes may be obscured. However, the inductive approach taken allowed findings to emerge from the frequent or significant themes inherent within the data, without restraints being imposed by a rigid methodology or pre-existing models and concepts. The key themes presented within this paper have resulted from multiple interpretations made from the raw data by researchers. Appendix 4 contains examples of the data gathering instruments used with teachers, parents and children.

Early in the programme a skills audit was begun to obtain data that would indicate qualifications and career/job category of parents in an attempt to identify potential gaps in education and training. However, this had to be abandoned as teachers complained that evaluation questionnaires requested too much information from parents and that asking for education background made the task much more onerous and was felt to be intrusive.

A psychometric test was administered by Hoshin[3](see appendix 4) which aimed to assess pupils' attitudes towards science. Pupils were asked to complete a pre-intervention test prior to involvement in a GDO or FLG activity and then complete a post-intervention test not later than one whole week after their involvement in the intervention.

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[3] The psychometric test was a key element of the external evaluation and administered by Hoshin who worked in collaboration with the main external evaluators EKOSGEN.

5. Results

5.1 Outputs

The programme as a whole is measured against the target numbers of 6 hour learning outputs. These are at two levels: the normal level and higher skills level. These targets have been met and exceeded over the course of the project with 4666 normal level and 187 higher level outputs reported at the close of the programme. These headline figures do not show other delivery which has added value to the project. Tables 5 and 6 show programme outputs and outcomes respectively.

Table 5 Programme Outputs

Programme Outputs	Contracted	Delivered
Key Stage 1 – 5 skills	3899	4666
Higher level Skills	150	187
CPD sessions	8	10
GDOs	8	39

5.2 Outcomes

Table 6 Programme Outcomes

Programme Outcomes
Enhanced professional practice of teachers
Aided development of 'Extended Schools Policy'
Provided an effective model for secondary schools transition strategy
Enhanced/established relationships between teachers/schools and parent
Recognised benefits to the transition stage of children's education
Increased interest in engaging in activity as a family unit
Provided a social element for parents to benefit from
Increased knowledge of children's ability
Increased understanding about the relevance of STEM to everyday life by pupils
Collaboration with parents enabled pupils to demonstrate their knowledge and skills
School-based activity provided a stimulus for learning science while having fun
Participation supported pupil's creative development and self-confidence

5.3   Impact

The following section provides a descriptive narrative regarding programme outputs, outcomes and impacts which is supported by qualitative evidence.

Teachers/Schools

All teachers who attended the CPD sessions stated that they found them effective in supporting delivery of FLG sessions and for their own professional development.   In particular, teachers identified the active approaches, relevance, and fun elements of the CPD sessions as key factors of the success of the FLG sessions:

The CPD sessions bring the science and technology in the materials to life. When you combine this with the visits, lectures and everything else it's a really powerful project.

(Sheffield teacher)

Relevance of the learning and teaching units and CPD sessions was highlighted as a very important factor and viewed by the large majority of the teachers as a significant influence on

delivery of the central aim of increasing pupils' achievement:

I do think it (relevance) will have a positive impact on pupils' achievement in science and technology.

(Rotherham teacher)

Implicit professional development was also mentioned by 70% of the participating teachers. In particular, working with pupils and parents was viewed by many as a steep learning curve but extremely worthwhile as there is little or no input during Initial Teacher Training (ITT) or relevant CPD which specifically identifies approaches and techniques for engaging families and parents:

He's (participating teacher) learnt a lot from the dynamics of working with pupils and parents. You have to address both and not just the child. You have to be supportive but recognise the relationships of parent and Child.

(Barnsley teacher)

Other teachers echoed this view and suggested that this type of implicit professional development contributes effectively to their repertoire of pedagogic knowledge and skills as well as organisation and management skills.

Five of the participating secondary schools are seeking to embed the programme within their Extended Schools policy and have, at least, embedded the learning and teaching materials into their schemes of work. They have embraced the programme well and view it as a suitable and effective approach to progress their strategy for developing an Extended Schools policy. During the programme one of the participating schools successfully passed an inspection by the Office for Standards in Education (OfSTED) through which they were questioned about their Extended Schools policy and strategy:

They [inspectors] asked about the policy and what we're doing and they were really impressed by RA3 and what we are doing through it.

(Doncaster teacher)

Eight of the secondary schools have used the programme as an effective induction mechanism for Y6 primary pupils. The schools are aware that transition from primary to secondary education can be a difficult process and a crucial stage in pupils' education. All of the teachers described the RA3 programme as an effective and positive approach to

sensitising both pupils and parents to secondary school education by supporting a smooth transition process from KS2 to KS3:

It's [transition] always a difficult stage for them (pupils) but also for parents too. By bringing them into the school for RA3 activities and going on visits, they get used to the environment and some staff more quickly, as well as understanding differences in the way we do things compared to their primary school.

(Rotherham teacher)

Involving parents during the transition period from KS2 to KS3 was perceived by all of the schools as crucial for successfully managing the process. Seven of the lead teachers from secondary schools stated that combining RA3 activities with school orientation is an effective approach to working with parents positively while also enabling mutual trust and respect to develop between parents and staff:

They have fun and learn through the RA3 activities and this lets us introduce aspects of our school to them gradually and helps us to develop good relationships with parents where they trust us and we them.

(Sheffield teacher)

Participating primary teachers expressed similar perceptions to those of the secondary school teachers regarding transition. They suggested that establishing good relationships with the secondary school helps to provide pupils with a feeling of continuity during transition. They stated that thus far, the programme has enabled strong collaboration between secondary and primary feeder schools that will afford greater communication between them and help sustain closer partnerships:

We do have a good relationship with them (secondary school) already I think, but the RA3 programme has helped us to develop that relationship further.

(Doncaster primary teacher)

All participating teachers (primary and secondary) acknowledged the close interaction with parents that the programme offers. One teacher, in particular, stated that there has been a considerable increase in numbers attending parent evenings. While there is no direct evidence to claim that RA3 is solely responsible for this increase it would be reasonable to assume that the programme has had some influence:

There are more parents attending parent evenings than ever and I'm sure RA3 has a lot to do with it.

(Barnsley teacher)

Parents

Four key themes emerged from the parent focus groups which all parents interviewed highlighted:

- Transition
- Activity
- Social aspect
- Increased knowledge of children's abilities

All parents stated that the RA3 programme is an effective approach to the transition stage of schooling. Participating parents described the transition from primary to secondary school as a difficult period for both children and parents where both can suffer from high levels of anxiety. They suggested that the RA3 programme has provided opportunities for their children to gain significant experience of the secondary environment prior to making the transition by introducing them to the school, teachers and other potential pupils:

Change throws my two boys. This (RA3) will help them to be confident when they move to secondary school. They've already met other kids who have been on the Grand Days Out.

(Rotherham parent)

Also, 90% of parents perceived the programme as a positive approach to developing and/or enhancing the relationship between primary and secondary schools by enabling teachers to work more collaboratively and, therefore, establishing stronger links between secondary and primary feeder schools that will not only aid a smooth transition process but also benefit school clusters through more effective communication strategies:

Its (RA3) forging links with the schools isn't it? It's got to be positive for primary schools to work as closely as this with secondary schools.

(Rotherham parent)

All of the parents engaged in focus groups demonstrated their enthusiasm towards the RA3 interventions. A key issue raised by the parents was that the programme provides inspiration for all family members and not just children:

There was nothing like this when we were at school it was pretty boring really. But RA3 is doing something different, its helping families to learn together and that's fun. I saw Granddads and Grandmas helping grandchildren as well as Mums and Dads.

<div align="right">

(Barnsley parent)

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The 75% of parents described how they perceive society to have changed and that currently few families are motivated to engage in activity together other than annual holidays. Careers/jobs, housework, computer games and TV were all listed as common distractions that restrict families from focusing on activity which they can participate in collaboratively. However, they suggested that engaging in activity that is fully organised enables families to concentrate on '*being together*', which in turn promotes greater learning and fun:

You don't have to worry about organising lunches or travel or anything. You just turn up and do it. And, because the things are focused, like the bridge building activity, you just get on with it as a family with no distractions. It's great, its about us being together learning and having fun.

<div align="right">

(Barnsley parent)

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During the focus groups 60% of parents suggested that both FLG activity and the GDOs add a social dimension to the programme which all parents value. They stated that being able to meet with other parents (often from different primary schools) enables them to discuss issues about schooling and education in general with peers in an informal setting. A small number of parents suggested that having an opportunity to engage with teachers informally can help to reduce perceived barriers that some parents may have regarding schools and education:

Meeting other parents was great for me and seeing that they are having to deal with the same sort of things to do with school that I do. Just talking to them was great and really useful.

<div align="right">

(Rotherham parent)

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However, the parents placed the main emphasis of the emergent theme of 'social aspect' on the value of children meeting other children. All agreed that involving children in activity which enables them to engage with peers from other schools is beneficial to developing their self-confidence and social skills. They also stated that primary age children are able to develop friendships prior to attending secondary school which may also support the transition stage:

He's already made two friends and he doesn't go until September (secondary school). He had a really great time building the town and that's where he met them.

<div align="right">

(Barnsley parent)

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All parents suggested that the programme has helped them to develop an increased awareness of their children's abilities. Many expressed surprise regarding the skills and knowledge which their children have demonstrated while engaged in RA3 activities:

I had no idea he [son] could be that creative and that confident. He just got on and did it.

<div align="right">

(Sheffield parent)

</div>

40% of parents suggested that they were inspired by the way their children demonstrated self-confidence and enthusiasm while engaged in activity. The large majority of parents stated that they had observed a '*can do*' attitude from their children whilst engaged in RA3 activities. These parents described this observation as very encouraging and something that they hope will influence their children's educational achievements:

They (children) weren't frightened to have a go and try things. It's helping them to have a can do attitude. I think it provides some foundation for future life.

<div align="right">

(Barnsley parent)

</div>

60% of parents described the difficulty of engaging their children in discussion about school work, suggesting that it's often difficult for them to stimulate a two-way dialogue concerning, for example, specific subjects, achievement and day-to-day school issues. However, these parents stated that they have noted a change in enthusiasm from their children towards discussing school work and, particularly, RA3 activities:

They're always difficult to pin down about school work and what they've done at school, but I have noticed that they are talking to me a lot more about RA3 and school in general now.

<div align="right">

(Rotherham parent)

</div>

Pupils

Pupils identified the GDOs as the crucial feature of the programme. All pupils who offered their views to the programme team stated that the GDOs were fun, interesting and relevant to their school work. They perceived them to be an effective tool in providing interesting contexts which were easy to link to their classroom STEM lessons. One pupil in particular

stated that:

The railway museum trip helped with a topic at my school about World War 2. It taught me about what they did to make sure the main towns and cities were not bombed or invaded.

<div align="right">

(Rotherham pupil)

</div>

A particular feature which was highlighted by the majority of pupils was the hands-on approach that the GDO's incorporate. 90% of pupils stated that this approach is generally different to the approaches which they are normally exposed to during classroom based STEM lessons which tend to be more teacher directed:

Its fun to be able to actually do something by doing it instead of just listening to someone else.

<div align="right">

(Barnsley Pupil)

</div>

60% of the pupils explained that they have returned to GDO venues with their families since their initial trips on a GDO, or are planning a further family visit based on their experiences:

We went back to Magna last week cause I enjoyed it when we did 'Build It'. I think my Mum enjoyed it as well cause we don't normally do stuff like that.

<div align="right">

(Doncaster pupil)

</div>

All pupils described the collaborative aspect of the programme as very enjoyable and suggested that having the opportunity to work with their families was not only fun but also provided them with the confidence and outlet to demonstrate their abilities to parents and/or carers:

I really enjoyed it on RA3 because you get to spend more time with your family and show what you can do because your Dad and Mum don't always know.   *(Barnsley pupil)*

70% of the participating pupils stated that they also enjoy school-based activity which has either supported GDO foci or been based upon an independent topic. Again, the central features of this work were the development of hands-on approaches and a learning environment designed to be fun and non-threatening. Teachers were able to develop both of these due to the absence of curricular restrictions, although much of the work undertaken was within curriculum specifications:

My favourite was building an eco-friendly village at St Michaels High School because it was fun and we got to make it ourselves. Me and my friend built a pizza hut.

<div align="right">

(Barnsley pupil)

</div>

55% of pupils stated that they enjoyed the opportunity to be creative and experiment with different approaches and activities as they are not normally encouraged to experiment during classroom-based STEM lessons. 'Build It' and Mechanisms were particularly highlighted as good examples of activities that stimulate creativity and pupil-centred learning:

The best thing was when we did the build a robot. You can be creative and use lots of different things to make it.

(Rotherham pupil)

Awareness of an increase in self-confidence was mentioned by 20% of pupils. Albeit a limited number they explained that their participation in RA3 had supported their development of their self-confidence and encouraged them to take greater involvement in STEM activities, both inside the school and outside, while also developing greater interest in working with their peers and families:

It's all been fun and it helps you build your confidence because you want to do more because you enjoy it. And it was good to do stuff with your family and show them that you're confident to do it.

(Doncaster Pupil)

Test details

The questionnaire used for the pre- and post-intervention psychometric test was created by Pell and Jarvis (Pell, T and Jarvis, T in International Journal of Science Education, 2001 Vol 23 No. 8). It was selected for a number of reasons:

- It had been developed with younger children, giving confidence that the questions would be understandable
- It was a questionnaire that asked questions about science
- Pell and Jarvis had established that the questions measured the same thing, were closely related to other measures of attitude towards science, and measured stable factors;
- The questions had been trialled with a large number of UK pupils, giving a relevant reference base

The questionnaire has 21 items, as set out in Table 7:

Table 7 Pre/Post Questionnaire Intervention

I should like to be a scientist
Science is good for everybody
Lots more money should be spent on science
You have to be clever to do science
I like science more than any other school work
I often do science experiments at home
Science is just too difficult
It is easy to find out new things in science lessons
Science has made us better and safer medicines
TV, telephones and radio have all needed science
Our food is safer thanks to science
We have to do too much work in science
I like to watch science programmes on TV
School science clubs are a good idea
Science makes me think
I am always reading science stories
I should like to be given a science kit as a present
We do too much science at school
Science can make chemicals we need from rocks
We have to do too much writing in science
One day, I should like to go to the Moon

The questionnaire was available both online and as a printed version. In some cases the questionnaires were completed close to the beginning and/or end of the intervention, and in some cases some weeks earlier or later. In so far as the questionnaire measures reasonably stable attitudes, these differences will not have affected the results of the assessment adversely, but it is possible that a more consistent approach to timing would have produced more clear-cut results.

The analysis of completed questionnaires considered the impact of the interventions on attitude. Pre- and post-intervention scores for each pupil were matched and a change score calculated. Any change in score might be attributable to three factors:

- Changes in attitude brought about by the intervention
- Changes in transient factors such as mood
- The general decline in attitudes towards science observed with age

Statistical techniques were used to control for the latter two factors, allowing attitude change attributable to the intervention to be more readily identified.

Based on the test results, RA3 appears to have had a positive impact on pupils' attitudes towards science – see below. A positive 'mean' indicates an improvement in attitudes, whilst a negative score indicates a worsening. A mean score of +/-3.5 would be considered significant so the attitudinal change achieved by RA3 is relatively minor but nonetheless positive. Note also that as attitudes towards science are known to generally decline after Key Stage 2, without any intervention a negative overall change score would be expected. Table 8 shows test results by individual providers:

Table 8 Test Results by Individual Provider

Average Change Score by Provider			
Provider	**Mean**	**N**	**Std. Deviation**
Humber Green STEM	3.44	227	8.44
RA3	1.87	1,036	10.46
cre8ate maths	0.90	450	9.49
North Yorkshire Holistic STEM	-1.12	571	9.58
Space Circus	1.87	2,939	10.43
World of Wonder	-1.49	82	9.09
Average	**1.48**	**5,305**	**10.23**

6. Strategic Added Value

A number of issues emerged which can be categorised as Strategic Added Value (SAV) and are summarised in table 7.

Table 9 Strategic Added Value

SAV	Issue
Strategic Influence	learning & teaching materials included in schemes of work
	Senior Management Team buy in
	development of dedicated 'Family Learning' facility
	distribution of legacy boxes
	legacy of the database
	increased numbers of parents attending school events
Developing Capacity	greater working capacity developed between partners
	offering parents a 'voice'
	regular engagement of Fathers
Developing other sources of funding and synergies	capacity with LAs to secure funding and develop collaborative working practices
	collaboration with NIACE
Generating knowledge and expertise	SHU knowledge and expertise increased; Academic dissemination

Five of the schools have integrated units of the learning and teaching materials, produced during the programme, into their schemes of work. In particular, Oakwood Technology College and Thryburgh Comprehensive have established an exciting range of materials for use with FLGs while also being linked to the curriculum. Integrating materials within schemes of work should aid sustainability of the programme.

Five schools have managed to establish buy-in from the Senior Management Teams of their schools. Hinde House 3-16 School, Oakwood Technology College, St Michaels RC and CE

High School, Carlton Community College, and Kirk Balk have gained significant support from their respective SMTs which should also aid sustainability of the programme. Concorde

Primary school, which has been working closely with Hinde House, has recently secured funding to refurbish a large room within the school that will be dedicated to family learning and promotion of parental engagement. This has been strongly influenced by their involvement in the RA3 programme:

Concorde are renovating one of their rooms as a result of the success they've had with RA3. You know it's a very difficult area for attracting parents into school but Concorde have been able to do that through RA3 and are hoping to continue.

(Hinde House Senior Teacher)

All secondary schools received 'legacy boxes' which aimed to add to the sustainability of the programme. Each legacy box contained a range of resources and equipment which schools can use to deliver FLG activity and other family learning sessions. The boxes included such items as video cameras, learning and teaching resources, electronic equipment, scissors, pens, basic tools, and model robot kits:

We'll keep the legacy boxes topped up with resources as we go on. The electronics stuff is really good and we'll add to that equipment..but I think it's a good idea to help schools deliver activities and to keep the project going.

(Sheffield Teacher)

The programme enabled all partners to consolidate their collaborative working practices and to develop strong potential for working together in the future. Through participation in the programme each partner has been able to add to their expertise and build further capacity between organisations and respective staff.

A large number of parents stated that they felt the programme had encouraged schools to offer parents a voice and that they believed this was a positive step in forging more effective relationships with parents and developing a 'listening' school:

I think RA3 has helped parents to get a foot in the door, as it were, I feel more confident to put my views over to teachers and that they will listen because I have more access to them.

(Rotherham Parent)

Negotiations with Sheffield Local Authority are ongoing with regards rollout and the potential of further funding. Negotiations with Rotherham Local Authority are at an advanced stage and, currently, appear positive.

7. Challenges and Further Learning Points

The RA3 model was delivered through secondary directing programme development within clusters. As described in section 5.3 secondary teachers found time constraints to be significant challenge regarding organisation of activities, attending meetings and attending CPD sessions. However, primary teachers reported this as much less of a problem for them suggesting that they had more flexibility and were able to find additional time to manage the programme. Also, in recognising that the programme is an effective approach for managing the transition stage of compulsory education a key lesson, taken from the gathered evidence, would be to change the delivery in order to charge primary schools with directing the development and delivery of the programme. A single primary school or staff from each primary school within a cluster would direct the programme and liaise with secondary schools from the cluster.

For many schools engaging parents was a problem. However, a number of schools have suggested that they are investigating the possibility of encouraging parents to direct future FLG activity with limited support from teachers. These teachers have stated that they will offer parents initial guidance on developing and delivering FLG activity and then withdraw to limited support. In this way, parents gain complete ownership of the FLG component, teachers need to dedicate less time, and other parents may be encouraged to become involved by their peers:

We have a core number of parents who might get involved in taking the FLG stuff forward. If we can do that then it's less pressure on us and should encourage other parents to come forward and join in.

(Barnsley Teacher)

Another issue, cited by a small number of teachers, related to involving parents was profile. Although schools recognised the website as a useful tool for increasing the profile of the

programme they felt that more needed to be done to increase the profile within their primary schools and local area and suggested that the website was probably not the most effective method for reaching parents and primary teachers. Therefore, a number of suggestions were

made which included developing regular newsletter for clusters, issuing leaflets to primary schools, delivering regular dissemination sessions, and sending publicity directly to families. Although there were dedicated staff within schools to deliver the programme a number of schools found it difficult to attract other individual to support the programme. However, family link officers, science liaison officers and/or primary link personal were used successfully in some schools to manage the programme with limited support from teachers. These schools all reported an increased ability to deliver by utilising non-teaching staff to manage and/or deliver activity within the programme:

Its helped enormously having him here because he's done most of the organising and some of the delivery too. It would have been really hard for me to do it all, but we've worked great as a team especially when few of the other departments would get involved.

(Barnsley Teacher)

A number of challenges faced the RA3 management team which included:

- financial processes
- gathering evidence from schools
- monthly reporting

The external constraints placed upon the financial planning were derived from other regional development projects that are designed to support the development of regional infrastructure. As a consequence the need to meet tight capital / revenue targets was challenging in an area in which the principle outputs were intellectual property rather than infrastructure. However these constraints did mean that very useful discussions took place both with the funders and the external auditors about how capital costs should be apportioned with a clear working definition being established.

In a similar way the project differed from other projects managed by SHU in that claims were made monthly against defrayed expenditure rather than against activity or deliverables within the same month. This meant that financial claims, whilst an accurate record of defrayed

expenditure, were seldom an accurate reflection of activity during that month. This also meant that budgeting and activity planning were generally quite complex and demanding. The need to work to two sets of financial years - the standard accounting year to March 31st and the University accounting year to July 31st introduced an added level of complexity.

For budgeting purposes a model based upon monthly delivery was useful in that this enabled a picture of forward activity and expenditure to be developed that could be mapped across both financial years. Regular face to face meetings with partners was essential to ensure that claims from partners were submitted accurately and on time. Each month required evidence to be gathered from three partners and 11 clusters. Attempts to do this at a distance were largely unsuccessful. Open discussion with the auditors was helpful in ensuring that all sides had confidence in the implementation of the system. This resulted in common understandings of capital spend and the apportionment of salary costs.

8. Future Direction and Conclusions

There is little, if any doubt, that the RA3 programme has enjoyed large success in achieving its contracted aims as well as delivering strategic added value. Participating teachers, parents and pupils have described their experiences and views as well as demonstrating their enthusiasm for the programme. There is evidence which indicates that participating pupils' attitudes towards STEM have been positively increased during the programme based on psychometric testing and teacher comments. However, with data still to be analysed this cannot be claimed unequivocally. While it is too early to claim, with any great confidence, that pupils' classroom achievements have increased as a result of their participation it, comments from teachers are encouraging. Teachers from a number of schools have suggested that individual pupils have increased their classroom achievement in STEM subjects. It is acknowledged that the evidence for this is, as yet, anecdotal, although it is expected that harder evidence will be gathered within the near future. Also, it is not possible to accurately measure how much impact RA3 has had on achievement in isolation of other STEM interventions. All participating schools engage with a wide range of STEM interventions and, therefore, invalid to claim that RA3 is solely responsible for any rise in pupil achievement. However, it is reasonable to assume that the programme has had some impact in this area if not a significant one. A similar issue can be reported regarding pupils' aspirations towards STEM careers and post-compulsory study. That said, with psychometric data indicating a significant positive increase in pupils' attitudes towards STEM subjects it would be reasonable to claim that the programme has had a positive impact upon pupils' aspirations towards to STEM.

12% of parents suggested that their attitudes towards STEM have positively changed, although these are only small numbers. However, a representative sample of parents stated that their attitudes towards education in general have improved greatly as a result of their involvement. Parents also stated that their aspirations for the children have also improved. Parents indicated that their aspirations for their children are often identified as low. They did not agree with this and stated that they simply want their children to enjoy their further study and/or career and that they do not expect to put pressure on them to attend higher or further education, but instead, will offer support and accept the children's decisions. Teachers have

also reported positive impacts from their involvement. Enhanced classroom skills, more effective relationships and greater involvement with parents have all been cited by teachers as received benefits. However, by far the greatest impact on teachers and schools has been the RA3 approach itself. The approach has been widely accepted by participating teachers and parents as an effective approach to managing the transition stage of compulsory education. There have been a range of models taken by the participating schools which indicates the flexibility of the RA3 approach and how differing contexts and vision can be accommodated.

Future development will concentrate on three main aspects:

- establishing RA3 Associate Schools
- delivering the approach through lead primary schools
- greater focus on the transition process

These three elements will form the basis of immediate programme development. However, other activity is also being investigated such as the development and publication of a book which focuses on family learning and parental engagement; registration of a PhD student who would be required to take the research further and investigate longitudinal impact on children and parents; and the development of parent training sessions that focus on delivering curriculum information and informing parents of classroom-based practises.

Family learning is situated at the interface between learning for adults as parents and learning for children. However, it is more than just these two elements: the integration of learning for adults and children in the family unit can produce enthusiasm for learning, collaborative family ventures and the establishment of new outlooks on family aims.

Family learning programmes are fundamentally structured around three key aims to:

• improve the skills of the parents

• improve parents' abilities and skills to help their
  children learn

• improve the children's own acquisition of skills

The RA3 programme has made great strides in achieving its contractual aims as well as securing a number of SAV elements. Important lessons have been learned which will enable the programme to progress effectively and provide a significant contribution to family learning and parental engagement strategy.

Appendix 1

Range of RA3 Activities

Complete List of Activities recorded by RA3 Project

Activity Ref	Topic	Type of Activity	Establishment
1	Launch Sheffield	Other	SetPoint
2	Build a Robot	Classroom	Balby Carr Community Sports College
3	POPMATHS	Classroom	SetPoint
4	Build IT	Grand Day Out	Kelham Island Industrial Museum
5	Family Learning Day	Grand Day Out	Drax Power Station - various schools
6	CPD	CPD	Family Learning Centre
7	CPD	CPD	Family Learning Centre
8	Build It	Grand Day Out	Magna Science Adventure Centre - various schools
9	Build It	Grand Day Out	Magna Science Adventure Centre - various schools
10	CPD	CPD	Kirk Balk School
11	Gladrags	Classroom	Don Valley School & Performing Arts College
12	At Home with Science	Classroom	Bawtry Mayflower Primary School
13	Bright Sparks	Classroom	Thrybergh Comprehensive School
14	Family Fitness	Other	Thrybergh Community Learning Partnership
15	Johnny Ball Lecture	Other	Royston High School
16	Pop Maths	Other	SetPoint
17	Various Activities	Classroom	Trinity Croft CofE J&I School
18	Build a Robot	Other	Balby Carr Community Sports College
19	Build It	Classroom	St Michael's Catholic & C of E High School
20	Johnny Ball Lecture	Other	Balby Carr Community Sports College
21	National Railway Museum	Grand Day Out	Kirk Balk School
22	National Railway Museum - York	Grand Day Out	National Railway Museum
23	Fun in the Kitchen - 3/6 + 10/6 + 17/6	Classroom-twilight	St Michael's Catholic & C of E High School
24	Maths with Royston High	Classroom-twilight	Royston High School
25	Mini Beasts and other creatures - 17/6 + 8/7	Classroom-twilight	Balby Carr Community Sports College
26	Pet Pen Project - 1/7 + 8/7 + 15/7	Classroom-twilight	St Michael's Catholic & C of E High School

27	Philosophy for children for parents	Other	Bentley New Village Primary School
28	Yorkshire Sculpture Park	Other	St Michael's Catholic & C of E High School
29	National Railway Museum	Grand Day Out	St Michael's Catholic & C of E High School
30	Build It - CANCELLED	Grand Day Out	Kelham Island Industrial Museum
31	Build It	Grand Day Out	Kirk Balk School
32	Starnight	Classroom-twilight	North Barnsley Neighbourhood Learning Net
33	Eureka	Grand Day Out	Limpsfield Junior School
34	National Railway Museum	Grand Day Out	National Railway Museum
35	Eureka	Grand Day Out	Limpsfield Junior School
36	Cadbury World	Industrial Visit	Cadbury World
37	Alton Towers	Other	Alton Towers
38	The Deep	Grand Day Out	The Deep
39	Family Learning	Industrial Visit	Cannon Hall Farm-Kelford School
40	Built It	Other	Kelham Island Industrial Museum
41	Built It	Other	Kelham Island Industrial Museum
42	Built It	Other	Kelham Island Industrial Museum
43	Built It	Other	Kelham Island Industrial Museum
44	Built It	Other	Kelham Island Industrial Museum
45	Built It	Other	Kelham Island Industrial Museum
46	Y1 Ceramics	Other	Bentley New Village Primary School
47	Rocket Day	Other	Bentley New Village Primary School
48	Super Learning Day	Other	Doncaster Dome
49	Foundation 2 reading workshops	Other	Bentley New Village Primary School
50	Foundation 2 reading workshops	Other	Bentley New Village Primary School
51	Dance, Games and Phonics workshops	Other	Bentley New Village Primary School
52	Family Seal	Other	Sure Start Children's Centre - Bentley
53	Health and Fitness- no recorded attendance.	Other	SetPoint
54	Garden Project	Other	Whirlow Hall Farm- Rotherham schools Industrial Trust
55	Dance Workshop	Other	Leeds Playhouse- Rotherham schools Industrial Trust

56	Science Club - KS2	Classroom-twilight	Toll Bar Primary School
57	Science activity - Energy content of food	Classroom	Don Valley School & Performing Arts College
58	National Space Centre visit	Grand Day Out	National Space Centre
59	Cooking for Christmas	Classroom	St Michael's Catholic & C of E High School
60	Natural History Museum visit	Grand Day Out	St Michael's Catholic & C of E High School
61	Mad Science	Classroom-twilight	High Greave Junior School
62	Mad Science	Classroom-twilight	High Greave Junior School
63	Mad Science- No recorded attendance	Classroom-twilight	Thrybergh Primary School
64	Manchester Science Museum	Grand Day Out	Limpsfield Junior School
65	Going Wild	Classroom-twilight	Wingfield Comprehensive School
66	Mad Science		St Gerards RC J&I School
67	The Deep	Grand Day Out	Royston High School
68	Looking Good and Feeling Great	Classroom	Toll Bar Primary School
69	Year 6 Technology Challenge	Classroom	Bentley New Village Primary School
70	YR5 Arts / Drama Day At Don Valley	Classroom	Toll Bar Primary School
71	Wingfield Space Adventure	Other	Wingfield Comprehensive School
72	Wingfield Space Adventure	Grand Day Out	Wingfield Comprehensive School
73	The Deep@Hull	Grand Day Out	Balby Carr Community Sports College
74	RA3 Lecture	Other	Balby Carr Community Sports College
75	Fishy Business RA3 Sessions- no recorded attendance	Classroom-twilight	Balby Carr Community Sports College
76	Cadbury World Visit	Grand Day Out	Southey Green Learning Partnership
77	The Deep	Grand Day Out	Chaucer Business & Enterprise College
78	Nature Detectives	Grand Day Out	Wingfield Comprehensive School
79	Cadbury World	Grand Day Out	Rossington All Saints CofE School
80	National Space Centre	Grand Day Out	St Michael's Catholic & C of E High School
81	The Deep	Grand Day Out	Kirk Balk School
82	National Space Centre	Grand Day Out	Oakwood Technology College
83	Family Learning Approaches	CPD	St Michael's Catholic & C of E High School
84	Mad Science	Classroom-twilight	Redscope Primary School
85	Mad Science	Classroom-twilight	Rockingham Junior & Infant School

86	Mad Science		Roughwood Primary School
87	Halloween Open Day		The Cusworth Centre
88	The Witches -Theatre Visit	Other	The Civic Theatre- The Cusworth Centre
89	African Art & Design Week		Toll Bar Primary School
90	Pirate Workshop- Floating & Sinking	Classroom-daytime	The Cusworth Centre
91	Getting 'IT' together	Classroom-daytime	Toll Bar Primary School
92	Story Sacks	Classroom-daytime	Toll Bar Primary School
93	Mad Science	Classroom-twilight	Trinity Croft CofE J&I School
94	Mad Science	Classroom-twilight	Thrybergh Fullerton Church of England School
95	Walking with Dinosaurs	Grand Day Out	Royston High School
96	Welcome to RA3 YH218	CPD	Science Learning Centre Yorkshire & the Humber
97	RA3 CPD YH218	CPD	Science Learning Centre Yorkshire & the Humber
98	RA3 YH218	CPD	Science Learning Centre Yorkshire & the Humber
99	National Space Centre	Grand Day Out	Balby Carr Community Sports College
100	Twycross Zoo	Other	Balby Carr Community Sports College
101	Dry Stone Walling	Other	Holy Rood RC Primary School
102	Royal Armouries	Grand Day Out	St Michael's Catholic & C of E High School
103	Twycross Zoo	Grand Day Out	Brightside Nursery and Infant School
104	Twycross Zoo	Other	Rossington All Saints CofE School
105	National Coal Mining Museum	Grand Day Out	Hinde House 3-16 School
106	Twycross Zoo Visit	Grand Day Out	Limpsfield Junior School
107	Making It	Other	The Making It Centre, Concord Juniors
108	Making It	Other	Balby Carr Community Sports College
109	Science Technology Fayre	CPD	Oakwood Technology College
110	Getting Fruity!	Classroom-twilight	Chaucer Business & Enterprise College
111	MOSI	Grand Day Out	Museum of Science and Industry
112	Flowers and the Golden Number	Grand Day Out	Science Learning Centre Yorkshire & the Humber
113	Flowers And the Golden Number	Grand Day Out	Science Learning Centre Yorkshire & the Humber
114	Royal Armouries	Grand Day Out	The Royal Armouries

115	Chocolate Extravaganza	Classroom-daytime	Wingfield Comprehensive School
116	Getting IT Together version 2	Classroom-daytime	Toll Bar Primary School
117	Science Museum-London	Grand Day Out	St Michael's Catholic & C of E High School
118	Build It Twilight Session	CPD	Kelham Island Industrial Museum
119	Build IT Twilight	CPD	Kelham Island Industrial Museum
120	Stem Live Session	Other	Balby Carr Community Sports College
121	In the Garden	Classroom-twilight	Concord Junior School
122	Ready Steady Cook	Classroom-daytime	Toll Bar Primary School
123	Manic Mechanisms	Classroom-daytime	Toll Bar Primary School
124	Balloon Buggy Challenge	Classroom-daytime	St Gerards RC J&I School
125	Austerfield Camping weekend	Other	Toll Bar Primary School
126	Healthy Eating week	Other	Oakwood Technology College
127	National Media Museum	Grand Day Out	St Michael's Catholic & C of E High School
128	Eureka	Grand Day Out	Carlton Community College (former Ed. Sherien scho
129	Family Learning Dissemination Event	CPD	Kirk Balk School

Appendix 2

Representation of Age, Ethnicity and Gender

Beneficiaries Type						
	No.	**Gender**	**No.**	**Ethnicity**	**No.**	**Age**
	2057	Male	3159	White	107	Aged 0
	2736	Female	51	Black	170	Five and under
	199	Blank	1479	Blank	1330	Between 5-10
	1	other	95	Mixed	1012	Between 10-16
			146	Asian	28	Between16-18
			9	Chinese	381	Between 18-35
			54	Other	830	Between 35-65
					38	Over 65
					1097	Blank
Total Records	**4993**		**4993**		**4993**	

Appendix 3

Programme Timeline

Year 1

Aim/Activities	Date Completed/ Milestones	Outputs (Volumes)	Outcomes (Impact)
Steering group meeting: This meeting is with the project partners and writers to ensure agreed targets, outcomes and shared planning	Nov 06	An established action plan for year 1, 2 and 3 Detailed outline of outputs for each partner in 1st year.	Shared understanding of the project goals. Action plan for Year 1
Specifications for learning units: Identification of topic to be covered in each of the learning units.	Nov 06	Generic specification for all units. Specification of FLG materials units 1 & 2	Specifications
contact companies related to the Learning Units as possible visit venues and skills cluster information providers.	Nov 06	One per unit: 2 initially rising to 8	learning units include industry related materials
Evaluation Framework: To establish guidelines to direct the development of the evaluation	Nov 06	Guideline	To provide a guideline to inform the development of subsequent evaluation tools.
Database development To set a system of collecting and managing information to fulfil YF audit requirements and inform the evaluation process	Nov 06	Identification of key fields in database	To provide a framework for subsequent data collection and management.

Planning meeting between RSLC and other main partners to agree upon quality criteria and evidence.	Nov 06	1 meeting	Agreed quality criteria.
Web Portal planning – Devising the form of web support for teacher and appropriate content to be shared with schools.	Nov 06	specification of portal content	draft portal
Schools Clusters: Initial contact made between lead secondary schools and cluster members	Nov 06	4 primary FLGs per lead school. FLGs	To establish FLG's in all schools.
Planning meetings within team to monitor progress and check claims and evidence	Dec 06	1 meeting	Discussion of project development; preparation of claims
Writing FLG materials	Dec 06	2 units	Initial drafts of FLG learning materials
Identifying link companies and producing visit structure to match FLG topics	Dec 06	Visit Plan	Visit plan and supporting materials in units.
Baseline collection: Data on school performance KS2/3	Dec 06	data	Data base set up to provide framework for reporting and ongoing evaluation
Needs analysis to identify CPD requirements	Dec 06	Survey of participant schools	Pattern of CPD / Training agreed with FLGs
Web portal development	Dec 06	outline web portal area created	Web portal to be used as electronic repository for training materials and teacher support materials.
FLG activities planned with Meetings between primary, secondary and others	Dec 06	Activity plan outlining content of FLG activity	Desired outcome – provide the model for FLG

involved in FLGs			
Planning meetings within team to monitor progress and check claims and evidence	Jan 07	1 meeting	Discussion of project development; preparation of claims
Writing materials for first two FLG activity units	Jan 07	Draft materials including resources and lesson plans	Materials for FLGs
Liaising with Schools to prepare visit programme	Jan 07	meeting	Needs analysis, preliminary list of venues
Identification of Baseline position	Jan 07	1 report for organisation produced	Improved awareness of needs in project.
Produce evaluation tool for measuring the effectiveness of interventions	Jan 07	Evaluation tool	Evaluation tool developed as part of evaluation framework
CPD for teachers and facilitators	Jan 07	Secondary & primary teachers	Initial CPD for all schools: Attendance sheets.
Web portal development	Jan 07	Materials for initial CPD placed on web portal.	Materials, teacher forum.
Trialling of FLG materials	Jan 07	teachers and facilitators assess materials	Feedback sheets and trialling reports
Planning meetings within team to monitor progress and check claims and evidence	Feb 07	1 meeting	Discussion of project development; preparation of claims
Writing materials for first two FLG units (P&S)	Feb 07	Final materials including resources and lesson plans	Materials for FLGs (units 1 and 2)
Production of Visit packs	Feb 07	materials to support visit	Materials for visits related to FLG unit materials

Production of evaluation tools	Feb 07	production of final version of evaluation tools	Evaluation tools
Development of enterprise support materials	Feb 07	Development of CPD materials	Draft materials
CPD Evaluation	Feb 07	Evaluation of initial CPD event	Evaluation report
Materials Dissemination through web portal	Feb 07	Web portal access to materials	Materials on web portal
FLG activity: preparing for launch event	Feb 07	Materials and activities	Attendance sheets, materials
Planning meetings Within SETPOINT team to monitor progress and check claims and evidence	Mar 07	1 meeting	Discussion of project development; preparation of claims
Launch Event presentation	Mar 07	Launch Event presentation	Attendance sheet, materials
Launch Event - Transport and visit support	Mar 07	FLGs taken to venue. Activities linked to venue.	Attendance sheet Invoices
Launch Evaluation	Mar 07	Evaluation of FLG activities, launch venue, outside participants	Evaluation report
CPD Materials planning enterprise input	Mar 07	Production of enterprise related materials to support CPD	Draft materials
Planning CPD	Mar 07	planning meetings for the second CPD Activity	record of meetings draft materials.
Launch materials on web portal	Mar 07	Dissemination of materials from launch event	Launch materials on web portal
Launch event - all FLG's to launch	Mar 07	Launch Event at Central venue for FLGs from all clusters.	Attendance lists, record of Grand Day Out.

Year 2

Aim/Activities	Outputs	Outcomes
	(Volumes)	(Impact)
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	Detailed outline of outputs for each partner in 2nd year.	Shared understanding of the project goals. Action plan for Year
Specifications for FLG unit materials	Topics identified for unit materials	Specifications
Identifying link companies and producing visit structure	One per unit = 2	learning units include industry related materials
Continuation of evaluation data gathering	evaluation data from launch event gathered	Data collected to enable evaluation and monitoring
Planning of enterprise support materials for CPD	Production of enterprise related materials for CPD	Draft materials
Planning CPD	Planning meetings for the CPD activity	Record of meetings, draft materials
FLG activity	FLG activity	Attendance lists, work/activity records
FLG activity	FLG activity	Attendance lists, work/activity records
Continued development of materials Input into CPD materials	Draft materials including resources and lesson plans; CPD draft materials	Materials for FLGs; CPD Materials for CPD
Planning meetings Within SETPOINT team to monitor progress and check	1 meeting	Discussion of project development; preparation of claims

claims and evidence

Analysis of evaluation data gathered from launch event and initial materials	Questionnaire data from FLGs	Shared understanding of impact & progress
Liaising with schools to prepare visit programmes	Visit Plan	Visit plan and supporting materials in units.
Delivery of CPD	Secondary & primary teachers	attendance lists
Web portal management	Continued management of online materials & dissemintation activity	Web portal to be used as electronic repository for training materials and teacher support materials.
FLG activities for initial materials	Activity plan outlining content of FLG activity	Draft activity plan for FLGs minutes
Meetings between primary, secondary and others involved in FLGs		
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives for year 2
Complete materials for initial materials	Completed materials including resources and lesson plans	Materials for FLGs
Liaising with Schools to prepare visit programme Completed input into FLG activity	meeting	Needs analysis, preliminary list of venues; industrial related content in materials
analysis of evaluation data from launch event	1 report for organisation produced	Improved awareness of needs in project.

input into FLG materials	Completed materials including resources and lesson plans	Materials for FLGs
CPD evaluation	Secondary & primary teachers	CPD evaluation data
Web portal management	Materials for CPD placed on web portal.	Materials, teacher forum.
FLG activity	teachers and facilitators assess materials	Feedback sheets and trialling reports
Planning meetings within team to monitor progress and check claims and evidence	1 meeting	Discussion of project development; preparation of claims
Trialing of materials	production of trial materials	trial materials
Production of Visit packs	materials to support visit	Materials for visits related to FLGs
Data gathering and analysis from FLGs	Data reports	Advanced understanding of impact & progress
planning for enterprise input into CPD	CPD plans	plans
CPD planning	Plan of CPD	Plan
Web support	Web portal access to CPD materials	Materials on web portal
Planning meetings	1 meeting	Discussion of project development; preparation of claims
Within SETPOINT team to monitor progress and check claims and evidence		
Specifications for FLG materials	Topics identified for FLGs	Specifications
Identifying link companies and producing visit structure to match FLG topics	One per unit = 2	learning units include industry related materials
Data gathering & analysis	Data from FLG activities –	Data

	questionnaires, interviews, observation notes	
Planning of enterprise support materials for CPD	Production of enterprise related materials to support CPD	Draft materials
Planning CPD	planning meetings for the CPD Activity	record of meetings draft materials.
web support	materials on portal	materials
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives
Continued development of materials	Draft materials x 2	Draft materials
Continued Identification of link companies and production of visit structure to match FLG activity	One per unit = 2	learning units include industry related materials
Continued data gathering & analysis	Data from FLG activities – questionnaires, interviews, observation notes	Data
Continued input into CPD	Enterprise related materials x 2	Draft materials
delivery of CPD	CPD	attendance lists
web support	portal plan	plan
FLG input into activities	Activity plan outlining content of FLG activity	Activity plan for FLGs

Meetings between primary, secondary and others involved in FLGs		
Planning meetings within team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives
Continued input into FLG activity	Draft material x 2	Draft materials
Liaising with Schools to prepare visit programme Completed input into FLG activity	meeting	Needs analysis, list of venues
Completion of data analysis	Evaluation report	Increased understanding of impact and progress
Continued input into materials for FLGs	Enterprise related materials x 2	materials
Evaluation of CPD	Materials x 1	Materials
Planning CPD	CPD plan	CPD plan
Liaising with partners to establish activity plan	Activity plan	Activity plan
Input into materials	materials	materials
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives
writing of materials	Material x 2	Materials
Liaising with Schools to prepare visit programme Completed input into FLG activity	Meeting, industrial related content in materials x 2	Needs analysis, preliminary list of venues;
input into materials	Enterprise related content in materials	Materials

	x 2	
Continued monitoring and evaluation activity	Data entered onto database;	Data
Planning of CPD	CPD plan	Plan
Delivery of FLG activity	Materials and activities	Attendance sheets, materials
Liaising with partners to establish activity plan	Activity plan	Activity plan
Input into materials	materials	materials
Planning meetings Within SETPOINT team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives
Input into delivery of FLG activity	Materials activity	materials
Production of visit packs; Liaising with schools to support FLG activity	materials to support visit	Materials for visits related to FLG activity
Monitoring FLG activity	Questionnaires; interviews; observations	Data
Enterprise support for materials/FLG activity	Materials\ activity	materials
Planning of CPD	Data analysis of questionnaires	Data
Web support	portal	portal
FLG activity	Materials and activities	Attendance sheets, materials
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives

input into materials		
Evaluation of industrial related visits/activity	1 report	Data
Gathering data from FLG activity	Gathering & collating data from FLGs	Data
Enterprise input into CPD	Plan	Plan
Planning CPD	planning meetings for the CPD Activity	record of meetings draft materials.
Web support	web portal	web portal
Completion of FLG activity	Materials and activities	Attendance sheets, materials
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives
Specification for 'grand day out'	Theme identified for 'grand day out	Specifications
designing visit structure to match 'grand day out'	Visit plan	Visit plan
Analysis of data from FLG activity	Data Report	Shared understanding of impact & progress
Input into 'grand day out' enterprise related content	Enterprise related support materials for 'grand day out'	Materials
Continued planning CPD	planning meetings for the CPD Activity	record of meetings draft materials.
Web portal	Web portal	Web portal
Identifying activity plan for 'grand day out'	Draft activity plan	Activity plan
Planning meetings within team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives
Grand day out writing support materials	materials	materials
Grand day out input to	materials	materials

support materials re: industry		
data analysis of FLGs	Report	Report; data
Grand day out input to support materials re|: enterprise	materials	materials
Delivery of CPD	CPD for Secondary & primary teachers	attendance lists
web portal	web portal	web portal
Delivery of grand day out	Activities	Attendance lists

Year 3

Aim/Activities	Outputs (Volumes)	Outcomes (Impact)
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	Detailed outline of outputs for each partner	Shared understanding of the project goals. Action plan
Specifications for FLG topics	Topics identified materials	Specifications
Identifying link companies and producing visit structure to match materials	One per unit = 2	learning units include industry related materials
Continuation of evaluation data gathering	evaluation data from launch event gathered	Data collected to enable evaluation and monitoring
Planning of enterprise support materials for CPD	Production of enterprise related materials for CPD	Draft materials
Planning CPD	Planning meetings for CPD activity	Record of meetings, draft materials
Web portal support	web portal	web portal

FLG activity	FLG activity	Attendance lists, work/activity records
Continued development of materials Input into CPD materials	Draft materials including resources and lesson plans; CPD draft materials	Materials for FLGs Materials for CPD
Planning meetings Within SETPOINT team to monitor progress and check claims and evidence	1 meeting	Discussion of project development; preparation of claims
Analysis of evaluation data gathered from grand day out and units	Questionnaire data from FLGs	Shared understanding of impact & progress
Data gathering & management	Data	Data
Liaising with schools to prepare visit programmes for FLGs	Visit Plan	Visit plan and supporting materials in units.
Continued development of CPD materials	Draft materials for CPD	Draft materials
Web portal management	Continued management of online materials & dissemintation activity	Web portal to be used as electronic repository for training materials and teacher support materials.
FLG activities Meetings between primary, secondary and others involved in FLGs	Activity plan outlining content of FLG activity	Draft activity plan for FLGs
Steering Group meeting: This is a progress & monitoring meeting of all	1 meeting	Shared understanding of progress; review of objectives for year

partners and steering group members		
writing materials for units	materials including resources and lesson plans	Materials for FLGs
Liaising with Schools to prepare visit programme	meeting	Needs analysis, preliminary list of venues; industrial related content in materials
analysis of evaluation data from launch event	1 report for organisation produced	Improved awareness of needs in project.
input into materials	materials including resources and lesson plans	Materials for FLGs
Planning CPD	Secondary & primary teachers	CPD for all schools: Attendance sheets.
Web portal management	Materials for CPD 3 placed on web portal.	Materials, teacher forum.
FLG activity	teachers and facilitators assess materials	Feedback sheets and trialling reports
Planning meetings within team to monitor progress and check claims and evidence	1 meeting	Discussion of project development; preparation of claims
Specifications for materials	Specifications	specification
Supporting FLG activity	coordination of 1 visit	attendance lists
Data gathering and analysis from FLGs	Data reports	Advanced understanding of impact & progress
Data management	Database	database
Planning CPD	CPD plan	Plan

Materials Dissemination	Web portal access to CPD materials	Materials on web portal
Planning meetings Within SETPOINT team to monitor progress and check claims and evidence	1 meeting	Discussion of project development; preparation of claims
Continuing with specifications for units 9 & 10	Topics identified for units 9 & 10	Specifications
Identifying link companies and producing visit structure to match FLG activity	One per materials unit = 2	learning units include industry related materials
Data gathering & analysis	Data from FLG activities – questionnaires, interviews, observation notes	Data
Planning of enterprise support materials for CPD	Production of enterprise related materials to support CPD	Draft materials
Planning CPD	planning meetings for the CPD Activity	record of meetings draft materials.
Web portal management	web portal	web portal
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives for year
Continued development of materials	Draft materials x 2	Draft materials
Continued Identification of link companies and production of visit structure to	One per materials unit = 2	learning units include industry related materials

match FLG materials

Continued data gathering & analysis	Data from FLG activities – questionnaires, interviews, observation notes	Data
Continued input into CPD 5	Enterprise related materials x 2	Draft materials
Delivery of CPD	Secondary & primary teachers	CPD for all schools: Attendance sheets.
Web portal management	web portal	web portal
FLG activities for materials outlined with meetings between primary and secondary schools	Activity plan outlining content of FLG activity	Activity plan for materials
Planning meetings within team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives for year
Continued development of materials for FLGs	Draft material x 2	Draft materials
Liaising with Schools to prepare visit programme	meeting	Needs analysis, list of venues
Completed input into materials		
data analysis	Evaluation report	Increased understanding of impact and progress
enterprise input into CPD	Enterprise related materials	materials
planning of CPD	plan CPD	Plan
Liaising with partners to establish final activity plan	Activity plan finalised	Activity plan

Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives for year
writing materials	Material x 2	Materials
Liaising with Schools to prepare visit programme Completed input into materials	Meeting, industrial related content in materials x 2	Needs analysis, preliminary list of venues;
input into materials	Enterprise related content in materials x 2	Materials
Continued monitoring and evaluation activity	Data entered onto database;	Data
Delivery of CPD	CPD for secondary & primary teachers	Attendance lists
Web portal maintenance	portal	portal
FLG activity on units	Materials and activities	Attendance sheets, materials
Planning meetings Within SETPOINT team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives for year
Input into FLG activity	materials x 2	materials
Production of visit packs; Liaising with schools to support FLG activity	materials to support visit	Materials for visits related to FLG activity
Monitoring FLG activity	Questionnaires; interviews; observations	Data
analysis of data	data	data

Evaluation of CPD 6	Data analysis of questionnaires	Data
web portal	portal	portal
Continued FLG activity on units	Materials and activities	Attendance sheets, materials
Planning meetings Within team to monitor progress and check claims and evidence	1 meeting	Shared understanding of progress; review of objectives for year
Input into units FLG activity	materials	materials units
Evaluation of industrial related visits/activity	1 report	Data
Gathering data from FLG activity	Gathering & collating data from FLGs	Data
enterprise input into CPD 7	materials for CPD	materials
Planning CPD re: grand day out	planning meetings for the CPD Activity	record of meetings draft materials.
web portal	portal	portal
FLG activity	Materials and activities	Attendance sheets, materials
Steering Group meeting: This is a progress & monitoring meeting of all partners and steering group members	1 meeting	Shared understanding of progress; review of objectives for year
Specification for grand day out	Theme identified for 'grand day out	Specifications
production of visit structure to match 'grand day out 2'	Visit plan	Visit plan
Analysis of data from FLG activity units	Data Report	Shared understanding of impact & progress
Input into 'grand day out 2' enterprise related content	Enterprise related support materials for 'grand day out'	Materials
Continued planning CPD re: grand day out	planning meetings for the CPD	record of meetings draft materials.

	Activity	
web portal	portal	portal
Identifying activity plan for grand day out	Draft activity plan	Activity plan
Planning meetings Within team to monitor progress and check claims and evidence; writing final report	1 meeting	Shared understanding of progress; review of objectives
Grand day out writing support materials	materials	materials
Grand day out input to support materials with industrial content	materials	materials
data analysis of all data	Report	Report; data
Grand day out input to support materials with enterprise content	materials	materials
Delivery of CPD re: 'grand day out'	CPD for secondary & primary teachers	attendance lists
web portal - dissemination of all materials	portal	portal
Delivery of grand day out	Activities	Attendance lists

Year 4

	April 09	
Data gathering: pre tests (EKOS)		Pre tests for GDO
Design GDO : maths theme		Draft outline of plan
Design of teacher CPD 1		draft materials
Design of parent training 1		draft materials
Project group meeting		minutes, attendance list
School-based activity: after-school & weekend FLGs		FLG activity: materials, attendance lists

Deliver teacher CPD	May 09	attendance list
Project group meeting		Minutes, attendance lists
School-based activity: 11 school clusters after school & weekend FLGs		
Data gathering: post tests	Jun 09	Post tests for GDO 1
Pre interviews with teachers		interview data 10 teachers
Parent questionnaire		Parent data - 10 parents
Project group meeting		Minutes, attendance lists
School-based activity - after-school & weekend FLG activity		
Pre interviews with teachers (cont)	July 09	Data
Design of teacher CPD 2 (cont)		materials,attendance lists
Input into parent training 2		Minutes
Project group meeting		Draft materials
School-based activity - after-school & weekend FLG activity		
Planning GDO 2	Aug 09	Draft materials
Project group meeting		Minutes
pre tests	Sept 09	Pre tests for GDO 2
Design GDO - maths/engineering theme		Draft plan
Deliver teacher CPD 2		Materials, attendance lists
		Minutes
Project group meeting		
School-based activity - after-		

school & weekend FLG activity		
Design GDO	Oct 09	Draft of GDO
parents/pupils		Materials
Project group meeting		Minutes
Parent questionnaire		Data
School-based activity - after-school & weekend FLG activity		
post tests (EKOS)	Nov 09	Post tests
Project group meeting		Minutes
Design teacher CPD		Draft materials
School-based activity - after-school & weekend FLG activity		Attendance lists
Deliver GDO x 2		
Delivery of teacher CPD	Dec 09	Attendance lists
Project group meeting		Minutes
Post interviews with teachers		Interview data 10 teachers
School-based activity - after-school & weekend FLG activity		
Analyse qualitative data - teachers	Jan 10	Data
Project group meeting		Minutes
Parent questionnaire - 20 parents		Questionnaire data
School-based activity - after-school & weekend FLG activity		
Analyse qualitative data - parents/teachers	Feb 10	Data analysis
Project group meeting		minutes
Parent focus group & teacher interviews		Parent data
website maintenance		Materials on website
School-based activity - after-school & weekend FLG activity		

Parent report & teacher report	Mar 10	Reports
Project group meeting		Minutes
		Conference
Dissemination - heads/assistant heads from Yorks & Humber schools		Materials, attendance lists
		Dissemination - presentation
Cascading programme to colleagues within schools - 11 school clusters		website
School-based activity - after-school & weekend FLG activity		
Consolidate website		

Appendix 4

Examples of Data Gathering tools

Parent Questionnaire

Name

Age

☐ under 30   ☐ 30-   ☐ 36-   ☐ 41-   ☐ 46-   over 50

Profession

1. How would you describe your attitude to…?
a. Science

☐ **negative**   ☐ **indifferent**   ☐ **positive**

b. Engineering

☐ **negative**   ☐ **indifferent**   ☐ **positive**

c. Maths

☐ **negative**   ☐ **indifferent**   ☐ **positive**

2. How confident do you feel discussing Science careers with your child/children?
Please circle one;

Not at all
       Extremely
Confident   Confident

1	2	3	4	5	6	7	8	9	10

3. How confident do you feel discussing Engineering/Technology based careers with your child/children?
Please circle one;

Not at all
       Extremely
Confident   Confident

1	2	3	4	5	6	7	8	9	10

4. How confident do you feel discussing Maths careers with your child/children?
Please circle one;

Not at all Confident								Extremely Confident	
1	2	3	4	5	6	7	8	9	10

5. When helping your child/children with homework, which subject do you feel most confident with?

6. Why do you feel most confident helping your child/children with this subject?

7. How confident do you feel completing Science homework with your child/children?
Please circle one;

Not at all Confident								Extremely Confident	
1	2	3	4	5	6	7	8	9	10

8. How confident do you feel completing Maths homework with your child/children?
Please circle one;

Not at all Confident								Extremely Confident	
1	2	3	4	5	6	7	8	9	10

9. How well do you feel you understand the school Science Curriculum? For example its aims, structure, etc.

Fully									Not at all
1	2	3	4	5	6	7	8	9	10

10. How well do you feel you understand the school Maths Curriculum? For example its aims, structure, etc.

Fully									Not at all
1	2	3	4	5	6	7	8	9	10

11. How well do you feel you understand the school Technology Curriculum? For example its aims, structure, etc.

Fully									Not at all
1	2	3	4	5	6	7	8	9	10

12. How well do you feel you understand general school processes? For example lesson planning, lesson structuring, etc?

Fully									Not at all
1	2	3	4	5	6	7	8	9	10

13. How do you think parents could engage more effectively with schools?

14. How do you think parents could support their children's learning more?

Thank you

Pre - Student Perception Survey

We would like to ask students taking part in our activity today to complete this survey. This forms part of a large piece of regional research that is being carried out that we hope will give us an insight into young people's perception of science.

Student Name: Age:

School Name: Home Postcode:

Gender: Ethnicity:

Statement	Strongly Disagree				Strongly Agree
I should like to be a scientist	1	2	3	4	5
Science is good for everybody	1	2	3	4	5
Lots more money should be spent on science	1	2	3	4	5
You have to be clever to do science	1	2	3	4	5
I like science more than any other school work	1	2	3	4	5
I often do science experiments at home	1	2	3	4	5
Science is just too difficult	1	2	3	4	5
It is easy to find out new things in science lessons	1	2	3	4	5
Science has made us better and safer medicines	1	2	3	4	5
Our food is safer thanks to science	1	2	3	4	5
We have to do too much work in science	1	2	3	4	5
I like to watch science programmes on TV	1	2	3	4	5
School science clubs are a good idea	1	2	3	4	5
Science makes me think	1	2	3	4	5
I am always reading science stories	1	2	3	4	5
I should like to be given a science kit as a present	1	2	3	4	5
We do too much science at school	1	2	3	4	5
Science can make chemicals we need from rocks	1	2	3	4	5
We have to do too much writing in science	1	2	3	4	5

| One day, I should like to go to the Moon | 1 | 2 | 3 | 4 | 5 |

Please indicate the activity being surveyed by placing a tick in one of the boxes below

| GDO | | School-based activity |

Example of a summary of a teacher interview

St Michael's Church of England and Catholic High School

18/03/09

Summary of involvement

I've only been doing the project since January 2008, before that it was a different assistant head. We've been involved in all of the 'Grand Days Out' that Stuart and Nicky have organised, in addition we're done our own activities. We've run three family food sessions – they always go down really well. We've also done a D&T project called the 'Pet pen project' where they used the design software to make pens.

Working with Parents

It's not easy to get them in at all.

It's never much of a problem getting them in for food activities, we always fill those and its dad's as well, not just mums. But RA3 is meant to have more of a science focus and it's much harder to get them engaged with that.

The parents really engage well with the activities.

We have to put a lot of time into publicizing the events to get people there. We put an advert in the Chronicle now, and it's always in our Newsletters.

I think working on this has changed our profile with parents, I think it's helped us to be an outward facing school – we're appreciated by the community a little more. They know we do these things and they appreciate it.

Impact

I was able to organise a trip to London before Christmas as part of the project because a lot of our kids have never been and their parents would never be able to take them. We had 54 people come and a waiting list to get a place, and we all went to the Natural History museum. That was so popular here, whereas other stuff has been much less popular. I think it's about what will actually work in your school – what appeals.

You don't really realise everything you've done until you look back, when you look back and see 1 years worth of activities you can see all of the people that have taken part and all of the different ages you've reached – its only when you do that, that you see the impact you've really had because sometimes it just feels like a slog to get things organised and people involved.

Success Criteria

We just like to know that everyone's had a good time, we try to engage as many families as possible, we have a couple of the parents who have been to all of the events but we do try to keep it so there's new families coming to each session.

Drawbacks

We've had problems working with the primary schools, they're hard to reach if I'm honest - because we're a religious school our primary feeder schools aren't all in this area. One of them is right over on the other side of town, we're looking to do something over there with them - we can never get them over here.

Benefits

Obviously it helps with transition, the kids are getting an insight into the school - they're getting to know the staff before they come here and seeing around the school. It's really great for the parents too because they're getting into the school which is important because a lot of parents really don't like coming in, they're intimidated.

It's been such an amazing project. The funding stream has enabled us to provide opportunities for our kids. Without it we wouldn't be able to fund any family learning. We've got funding issues here so RA3 has provided amazing opportunities to take families to places they wouldn't have been able to go.

You can use this project to raise standards before the kids have even got to your classrooms. The work with the primary school kids is so important.

The Future

It takes such a long time to embed it all in the school; it will be such a shame if it just stops. After all those years of putting it together it's finally started gaining momentum. It takes a long time to work out what model works, you have to work out what suits each school, each one's different. I want to set up a multi-pronged approach with us engaging in activities at the Primary schools so they will feel more confident engaging in the activities up here.

Any future family learning without funding would be limited; I don't see how we can really carry on as the money would have to come out of our specialist status money which would take it from lessons for after school activities and I don't think that would be seen as a priority.

References

Bevins, S.C., Brodie, E, and Thompson, M.   (2008)   Exploring the relationship between socioeconomic status and participation and attainment in science education. The Royal Society. June.

Bloom, B.S.   (1980)   The new direction for educational research: alterable variables. *Phi Delta Kappan*. 61, pp. 382-385

Christensen, S.L., Rounds, T., and Gorney, D.   (1992)   Family factors and student achievement: an avenue to increase students' success. *School Psychol*. Quart 7, pp. 178-206

DCSF (2005) Higher Standards, Better Schools for All, London: HMSO

DCSF (2007) Every Parent Matters, London: HMSO

Desforges, C. and Aboucher, A.   (2003)   The impact of parental involvement, parental support and family education on pupil achievement and adjustment: a literature review. Report Number 433, Department of Education and Skills.

DFES (1997) Excellence in Schools, London: HMSO

Epstein, J.   (1992)   School and family partnerships. Encyclopedia of Educational Research. Alkin, M. Sixth New York, Macmillan.

Harris, A. and Goodall, J.   (2007)   Do parents know they matter? Parental engagement and educational achievement: reviewing the evidence. University of Warwick. DCSF.

Izzo, C.V., Weissberg, R.P., Kasprow, W.J., and Fendrich, M.   (1999)   A longitudinal assessment of teacher perceptions of parental involvement in children's education and school performance. *American Journal of Community Psychology*. 27, pp. 817-839

Melhuish, E., Sylva, C., Sammons, P., Siraj-Blatchford, I., and Taggart, B.   (2001)   Social behavioural and cognitive development at 3-4 years in relation to family background: the effective provision of pre-school education, EPPE project. DfEE. London: The Institute of Education.

National Centre for Social Research   (2004)   British social attitudes survey. SN 5329

Okpala, C.O., Okpala, A.O., and Smith, F.E.   (2001)   Parental involvement, instructional expenditures, family socioeconomic attributes, and student achievement. *Journal of Educational Research*. 95, pp. 110-115

Singh, K., Bickley, P.G., Keith, T.Z., Keith, P.B., Trivette, P., and Anderson, E.   (1995) The effects of four components of parental involvement on eighth-grade student achievement: structural analysis of NELS-88 data. *School Psychology Review*. 24, pp. 299-317

Stevenson, D.L., and Baker, D.P.   (1987)   The family-school relation and the child's school performance. *Child Development*. 58, 1348-1357

Sui-Chu, E. and Willms, J.D.   (1996)   Effects of parental involvement on eighth-grade achievement. *Sociology of Education*. 69, pp. 126-141

Sylva, K., Melhuish, E. Sammons, P., Siraj-Blatchford, I. and Taggart, B.   (1999)   The effective provision of pre-school education (EPPE) project. Institute of Education, University of London.

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