

# Independent Evaluation of Every Child Counts: Final Report

## Trial 1 Appendices

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## **Appendix 1: Protocol Trial 1 (Final Version)**

### **Protocol version 7.0 (27/04/09)**

(note: Ethics approval received 22/01/09; Operational Group approval received 17/04/09; Research Advisory Group approval received 17/07/09)

### **National Evaluation of Every Child Counts: Trial 1**

This protocol describes a randomised controlled trial of one-to-one delivery of the Every Child Counts (ECC) intervention 'Numbers Count' versus normal classroom practice for attainment in mathematics.

The Department for Children, Schools and Families (DCSF) is the sole external funder of this trial. This protocol is derived from the detailed project description of the DCSF funding application entitled "Evaluation of Every Child Counts" [DCSF: EOR/SBU2008].

Trial management is by the Institute for Effective Education (IEE) and the York Trials Unit (YTU), University of York.

#### **SUMMARY OF PLANNED INVESTIGATION**

##### **Research objectives**

Our primary aim is to obtain robust evidence of the effectiveness of the Numbers Count intervention (Numbers Count Handbook 2008-2009, Edge Hill University, 2008) on children's attainment in mathematics. We plan to undertake a pragmatic randomised controlled trial (RCT) of one-to-one delivery of the Numbers Count intervention versus normal practice for attainment in mathematics. This will be an individually randomised trial using a wait list design. The 12 Year 2 children identified by the schools as being eligible to receive the intervention will be randomised to receive the intervention in the first, second or third terms of the school year 2009-10. All children eligible to receive the intervention will receive it.

We will also look at the relative effectiveness for the children of receiving the intervention in the first, second or third terms of the year, and we will look at the durability of the impact of the intervention (in terms of the outcomes at the end of the year by comparing the mean values for children receiving the intervention in the first term with the mean values for children receiving the intervention in the second and third terms). We will also assess the wider impact of the intervention by analysing wider quantitative outcomes of the children in the cohort.

##### **Study population**

After a period of preparation and upon University of York Humanities and Social Science Ethics Committee approval and Every Child Counts Advisory Group approval (note: Ethics approval received 22/01/09), recruitment into the RCT will be during February 2009. This will include all ECC schools in the 6 Local Authorities which historically received higher levels of funding because they provided support in the initial exploratory stages of developing the Every Child Counts programme. These schools will, therefore, be more able to meet the extra demands placed on them by the proposed RCT. The schools represent a range of urban and rural authorities. All 12 children in each of the recruited schools eligible for the intervention will be included in the trial. Exceptionally, schools may recommend a pupil as being unsuitable for randomisation but this will be discouraged as it will reduce the external validity of the trial. Because of the way in which the LAs (and schools) were

selected for participation in the trial (i.e. they were the LAs which received higher funding to ensure they would be able to participate in the independent evaluation of the intervention – see above) we anticipate between 80% and 90% recruitment success. Assuming this recruitment rate and allowing for drop-outs we propose that approximately 50-60 schools will be recruited and approximately 600-700 children will be randomised (note: signed consent forms returned by 50 schools as of 27/04/09; 43 consenting schools remaining in Trial as of 23/07/09, 7 schools having dropped out due to NC teacher in these schools leaving and being replaced by untrained NC teacher). We recognise that this is ambitious. Given the expectation that all schools accepting the higher funding will participate we believe the expected recruitment rate is realistic. However, we acknowledge that failure to recruit the 50 schools required in our power analysis will impact on our analyses in that we will only be able to detect larger effects than those described in the sample size calculation. We have therefore put a contingency plan into place. We will work first with the Headteachers and Numbers Count Teachers and secondly with the Teacher Leaders to help us recruit any schools that are initially not enthusiastic about participation. We anticipate that further information and clarification about the trial will allay any concerns that the schools have about the rationale for and conduct of the trial. In the extreme situation of not being able to recruit the 50 schools we would also be able to include randomised data from some of the schools from the Trial 2 study which compares one-to-one delivery of the intervention with one-to-two delivery and one-to-three delivery, but which does also contain randomised data of one-to-one delivery with no intervention.

## **BACKGROUND**

The relative improvement of primary mathematics teaching is widely accepted, with the number of 11 year-olds gaining level 4 and above at Key Stage 2 having risen from 59% percent in 1998 to the current figure of over 77%. However, the picture for low achieving pupils is rather bleak and of widespread concern. Since 1998 the number of children failing to achieve level 3 has remained at about 6% - i.e. whilst the majority of children have improved, the lowest performing children have remained at much the same level.

There are many harmful consequences of low attainment in maths, both in the short term, for example, not being able to access many areas of the curriculum (as well as maths itself) and the potential negative social consequences; and in the longer term, difficulties at secondary school and into adulthood, as well as limitations in terms of the skills of the UK workforce. Indeed, a slightly higher proportion than the 5% of low attaining pupils at KS1 go on to leave secondary education with no qualification in mathematics.

It is widely agreed that a child who is having significant difficulties at an early stage (i.e. KS1) is likely to under-achieve in mathematics throughout their school life, and beyond. To help address these problems the Primary National Strategy (PNS) introduced the three wave model of intervention, with the lowest performing (wave 3) children receiving personalised and individual remedial teaching.

More recently the Every Child Counts (ECC) initiative has been developed by a partnership consisting of a coalition of business partners and charitable trusts (the Every Child a Chance charity) and the Government (DCSF and the National Strategies). Every Child Counts has as its main aim developing and supporting wave 3 intervention for the bottom 5% of KS1 children, with a subsidiary aim of impacting on standards more widely by influencing classroom practice and supporting less intensive (Teaching Assistant led) interventions for the bottom 5-10% group.

The Every Child Counts intervention Numbers Count provides an intensive one to one intervention for those children identified as low achievers (the bottom 5%). In practice it aims to raise their level of performance so that they achieve level 2 or better and wherever

possible to level 2B or better by the end of KS1 – in effect putting them on a par with their peers, and then able to continue to progress in maths in the normal mainstream class setting. It is proposed to achieve this by developing mathematics interventions for Year 2 children within the following three waves:

Wave 1 - Quality first teaching for all children

Wave 2 – Small group additional intervention for children just below national expectations

Wave 3 – Individual or very small group intervention with a trained and supported TA for children who are struggling and Numbers Count additional intervention on an individual and/or very small group basis with a trained specialist teacher.

*Every Child Counts* contributes funding to help schools to employ and train specialist Numbers Count (NC) teachers to deliver daily one-to-one Numbers Count teaching for those children with the most severe difficulties.

Edge Hill University, working in partnership with Lancashire Local Authority, has taken the lead in developing the intensive intervention Numbers Count which is the specific focus of this evaluation.

Numbers Count is a 12 week programme, consisting of daily 30 minute sessions for the target children and delivered by the trained Numbers Count teachers. The core elements are a comprehensive diagnostic assessment of the child's strengths and weaknesses, core learning objectives for the lessons and guidance for teachers on lesson structure and key teaching approaches. There is also continuing professional development and quality assurance for NC teachers. Numbers Count is designed to help children to develop their knowledge and understanding of number. Numbers Count teachers aim to give children confidence in number and an understanding of patterns and relationships that they can extend to other aspects of mathematics in their class lessons. They use shape, space and measures and handling data as contexts for the development and application of children's number skills and children continue to study the full breadth of the mathematics curriculum with their class teacher.

There is a clear need to obtain reliable evidence to inform policy and practice, and crucially to establish the level of effectiveness of Numbers Count compared with normal classroom practice. This is the focus of this trial. There is also a need to have robust data by Easter 2010 in order to enable a formative input into policy decision regarding the national roll-out in September 2010.

## **RESEARCH METHODS**

As indicated, we intend to undertake a pragmatic randomised controlled trial evaluating the effectiveness of Numbers Count versus normal classroom practice for attainment in mathematics of the children in Year 2 performing in the bottom 5% nationally in mathematics.

### *Design*

This will be a focused randomised controlled trial to assess both the effectiveness of the Every Child Counts intervention and the sustainability of the impact depending on the term of delivery. In this study the 12 children within each school participating in the trial who are eligible to receive the intervention will be randomly allocated to participate within one of three terms of implementation of the Every Child Counts intervention. The participant schools for this trial will be selected from the cohort of schools implementing the intervention for the *second* year in 2009-10. We will be able to assess the effectiveness of the intervention by using the data from children receiving the intervention in the second and third terms acting as controls for children receiving the intervention in the first term.

### *How are the results of the trial to be used/interpreted?*

The trial aims to establish whether Numbers Count yields superior results to normal classroom practice, and to measure the extent of the mean difference between children exposed to the intervention compared with children not exposed to the intervention but receiving normal classroom practice in mathematics, i.e to follow the statutory content in the mathematics National Curriculum supported by the Primary National Strategy for numeracy.

As detailed below, our Protocol emphasises the standardised training for delivery of the intervention and the standardised manual for implementation of the intervention which are normal practice, but also emphasises and justifies the ways in which implementation of the intervention is necessarily different in some minor details from standardised practice *for the purposes of the trial*. Currently there is an absence of robust independent evidence to inform policy.

### *Brief details of the proposed practical arrangements for allocating children to the three trial groups: Autumn 2009, Spring 2010 or Summer 2010*

Once schools have identified the children who are eligible to receive the intervention, and consent from the children and their parents to be involved in the trial, specifically to undertake any additional testing that will be necessary for the purposes of the trial (including consent to take the wider outcomes tests) has been checked and verified (note: consent to be in the trial is a section on the consent to receive the intervention form) and the baseline testing has been completed, the schools will contact the Trial Co-ordinator either by telephone or by e-mail to access the randomisation process (which will be undertaken by the York Trials Unit). This will ensure unbiased allocation to trial arm.

### *Proposed methods for avoidance of bias*

Randomisation will control for selection bias, temporal and regression to the mean effects. In Trial 1, children in the Every Child Counts Trial 1 schools will be identified as being suitable for the programme and then randomly assigned to the intervention or wait list control groups. By doing this we will be able to control for temporal effects as these will influence the intervention and wait list control groups equally. Moreover because pupils will be *randomly* allocated we know that, except for chance differences, the only factor or variable that will affect outcome is the intervention itself (with enough children in the sample individual differences will cancel each other out). Therefore if the outcomes differ between the children after the intervention we can be reasonably confident that this was due to the intervention itself, and not some other factor.

In the following section we discuss, further, the issues of bias and describe how they may be minimised or eliminated. A biased evaluation may give an incorrect result, thus potentially misleading policy makers, teachers, researchers, pupils and parents into believing an intervention is more or less effective than actually is the case. There are several threats to any experimental evaluation; below we outline how we propose to deal with these potential threats in relation to our proposed research designs for the impact evaluations.

*Selection bias* – As noted previously this occurs when groups of schools or pupils are not formed by random allocation and consequently the groups differ *before* they are given an intervention in some known or unknown and unmeasured variable(s). Although the schools recruited into this trial have not been randomly selected and so therefore may have common characteristics such as increased enthusiasm and commitment to the programme, schools selected to use any intervention *may* differ in characteristics, such as teacher enthusiasm or pupil achievement that could affect future test results. The best method of eliminating this problem is through random allocation. We propose to use random allocation as our principal evaluative strategy for Trial 1.

*Ascertainment bias* – This occurs if those marking the post-tests are aware of the group allocation of the pupils from which the tests originate. The assessment at post-test will comprise primary and secondary outcome measures. The primary outcome measure will be administered and marked independently. We will ensure assessment of outcome will be blind. This test will be:

Primary outcome measure: Progress in Maths 6/7 NFER Nelson

A further assessment at post-test will also be undertaken by the Numbers Count Teachers (secondary outcome measure). Whilst blinded assessment of outcome will not be possible for this test, as this is a wait list design, we propose close liaison with Edge Hill University and with the National Trainers and Teacher Leaders in order to raise awareness of the importance of adherence to assessment protocols to ensure as robust assessment of outcome as possible. This test will be:

Secondary outcome measure: Sandwell Tests A and B

*Resentful demoralisation* – This occurs when the control group is dissatisfied because they are not receiving an intervention. For Trial 1 we propose to address the possibility of resentful demoralisation by ensuring all the control group children eligible to receive the intervention do so, using a wait list design.

*Attrition bias* – This occurs when there is non-random loss of participants after random allocation. To avoid this we propose to assiduously follow-up all participants (including, if possible, those who move school) and include their data in our analysis. Assiduous follow-up of all participants does have significant resource implications if large numbers of pupils move schools. However, we will be able to use the results from KS1 assessments available on the National Pupil Database (to which we have access) for any pupils who drop-out and this will limit the amount of resources required to obtain post-test results for any drop-outs.

*Non-compliance* – This can introduce selection bias if only those pupils who comply with the intervention are included in the analysis. To prevent this we propose to include all pupils in the analysis whether or not they comply with the intervention – this is known as intention to treat or teach analysis (ITT). Intention to treat analysis answers the key policy question: If we offer Numbers Count to all schools, what is the impact on *national* numeracy skills? If there is significant non-compliance, however, it may not answer the question: If Numbers Count is implemented in a school what will be the effect on an individual child or school's performance? If there is significant non-compliance we will use an analytical approach known as Casual Average Complier Effect (CACE), which allows us to take into account non-compliance and answer both the policy related question and the individual child effects of Numbers Count.

*Misallocation or subversion bias* – Failure to use independent randomisation can lead to researchers allocating in a non-random fashion, which can introduce selection bias. We propose to use the randomisation service provided by the York Trials Unit to health care and education trials to ensure that allocation is rigorously produced in the trial.

*Sample size and power* – In our experience most randomised trials of educational interventions are usually not large enough to identify small but policy important differences. The sample size in the trial will give us good statistical power to identify small but important differences in outcomes, including being able to do various sub-group analyses. In our sample size calculations below we describe the power of 95%, which means that for any given hypothesized difference we will have approximately a 9.5 in 10 chance of showing this. We think, however, that this is conservative and that our actual power will exceed this. We

also describe our outcome differences in effect sizes, which essentially means that we will be looking for a difference in mean test scores between the groups divided by the group standard deviation. The effect sizes powered by the sample will enable us to detect an effect size of at least 0.25 for the trial. In addition, we intend to undertake a number of subgroup analyses. Therefore we need to ensure that all trials will be sufficiently powered to support this.

Note that, even small effects may be worthwhile, however. For example, a relatively small effect size of 0.10 means that for a test that has a pass score of 50% then 4% more children will pass this threshold. Although this seems a small proportion translated to a national annual school population this will translate into around 20,000 more children passing a maths threshold. Another way of looking at this impact is that for a class of 25 children this would mean the intervention results in one more child passing a maths threshold. An effect size of 0.20 implies roughly that 8% more children will pass a given threshold or 40,000 children nationally, whilst an effect size of 0.32 is about 14% more children.

## **OUTCOME MEASURES**

### *Pre-testing and post-testing*

All 12 Every Child Counts children in each school will have a pre-test (Sandwell A), **after which** they will be randomly allocated by the York Trials Unit into three groups: Group 1 will receive Numbers Count in term 1, Group 2 will receive Numbers Count in term 2; and Group 3 will receive Numbers Count in term 3. In essence we have a randomised design with a wait list control, thus, the children will be randomised to receive the intervention at different intervals.

As noted above, all 12 children will receive a pre-test in the form of the Sandwell test (A) at the beginning for the year. They will all be post-tested at the end of the first term using NFERNelson Progress in Maths 6/7 (independent test) and (Sandwell B). The children will be tested again at the end of the second term (Sandwell A test) and there will be a final post test at the end of the third term (Sandwell B test). The NFERNelson Progress in Maths 6/7 is the primary outcome measure. The main randomised comparison will be at the first post-test in January, 2010.



**Table 1: one-to-one delivery of intervention versus no intervention (wait list): Testing regime for 50-60 trial schools**

| <b>Pupils</b>                               | <b>First Evaluation test<br/>September 2009</b> | <b>Second Evaluation tests<br/>December 2009/January 2010</b>                    | <b>Third Evaluation test<br/>March 2010/April 2010</b> | <b>Fourth Evaluation test<br/>July 2010</b> |
|---|---|--|--|---|
| 4 Children receiving NC in Autumn Term 2009 | Sandwell A (Entry)                              | Sandwell B (Exit)  | Sandwell A (3 month)                                   | Sandwell B (6 month)                        |
|   |   | INDEPENDENT TEST Progress in maths 6/7   |  |   |
|   |   | Wider outcomes assessments (PIPS, SDQ) (optional)                                |  |   |
| 4 Children receiving NC in Spring Term 2010 | Sandwell A                                      | Sandwell B (Entry)   | Sandwell A (Exit)                                      | Sandwell B (3 month)                        |
|   |   | INDEPENDENT TEST Progress in Maths 6/7   |  |   |
|   |   | Wider outcomes assessment (PIPS, SDQ) (optional)                                 |  |   |
| 4 Children receiving NC in Summer Term 2010 | Sandwell A                                      | Sandwell B   | Sandwell A (Entry)                                     | Sandwell B (Exit)                           |
|   |   | INDEPENDENT TEST Progress in Maths 6/7   |  |   |
|   |   | Wider Outcomes assessment (PIPS, SDQ) (optional)                                 |  |   |
| All Yr 2 children 2009/10                   |   | INDEPENDENT TEST Progress in Maths 6/7<br>Wider outcomes assessments (PIPS, SDQ) |  |   |

|   |
|---|
| <b>Normal Practice and required by Evaluation</b>           |
| <b>Additional testing/assessment required by Evaluation</b> |

Note: All 12 pupils to be allocated at random to Autumn, Spring or Summer term. Schools to withdraw any pupils who could be harmed by randomisation before randomisation is conducted; these pupils will not receive ECC unless the schools can create additional slots. All normal practice entry tests will be conducted by the Numbers Count teacher or to a trained Teaching Assistant. All normal practice exit and follow up tests will be conducted by the Link teacher, the NC teacher or a trained TA.

Secondary outcomes are:

- Sandwell
- KS1 numeracy results

*Wider impact (quantitative assessment)*

In addition to the assessment of impact on numeracy abilities, we propose to measure the following variables in order to assess the wider impact of the intervention:

- (a) Attention/behaviour/mental health (SDQ Goodman teacher/parent scale);
- (b) Attitudes to mathematics, literacy and school (PIPS);
- (c) Attendance (PLASC);

All wider impact assessments will be piloted before use.

A paper based survey to be completed by teachers will be developed, approved (Operational Group) and piloted during July 2009. This will seek factual information about teachers' experience and qualifications and will include a log for the teachers to record each child's participation in Numbers Count. **This information will be used: a) as a check for fidelity of implementation (but note this will be by self-report, not independent observation, and conclusions derived from results will need to take this limitation into account); and b) to gather information on variables for subgroup analyses.**

## **PROPOSED SAMPLE SIZE**

The power calculations are based upon the following data. We expect the intervention group to improve by 1.25 standard deviations or greater compared with the pre-test value and we wish to detect a marginal increase of 0.25 compared with the wait list controls. We also assume a pre-test post-test correlation of at least 0.70. To have at least a 95% chance of observing such a difference we would need approximately 600 children in our sample given a randomisation ratio of 2:1 (i.e., at the end of the first term 8 children will be in the control group and 4 will be in the intervention group). To recruit this number we will require a total of 50 schools.

## **STATISTICAL ANALYSIS**

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation. The primary outcome is the NFER Nelson Progress in Maths 6/7. The difference between the intervention group and the control group will be compared. We will undertake a regression analysis with the dependent variable as the post-test. As well as group allocation we will also include pre-test, age and gender as explanatory variables. School will also be included in the regression models. This is because the children will be clustered by school and there is a possibility that there may be a 'teacher effect'. The anonymity of all schools, children and teachers will be preserved for all analyses and there will be no presentation or comparison of the results from individual schools or teachers. Subgroup analyses are planned to assess the effectiveness of the intervention for children with different learner characteristics (EAL, gender etc). There is a possibility that the experimental group may look artificially good immediately after the intensive tutoring. Our design can deal with this in part by comparing the first cohort to the third cohort on the April assessment (although this will only be possible using secondary outcome measures). In addition, by comparing the first to the second cohort at that time we will also check to see whether, in fact, there is a one-time bump in scores immediately after intensive tutoring.

## **QUALITY ASSURANCE PROCEDURES FOR DESIGNING AND REPORTING RCTs: THE CONSORT GUIDELINES**

We have designed and we will report the trial described above using the CONSORT guidelines or statement (Altman *et al*, 2001). CONSORT was developed by a collaboration of medical journal editors and leading trial methodologists to ensure that medical trials were conducted and reported to the highest standards. CONSORT has recently been adopted by leading psychological journals. Some of the co-applicants (Hulme, Torgerson C, and Torgerson D) have used the CONSORT approach to design and report recent trials in education (Brooks *et al*, 2006; Brooks *et al*, 2008, *in press*) and Torgerson C has published minor amendments to CONSORT making it suitable to be applied more widely to educational trials (Torgerson *et al*, 2002a; Torgerson *et al*, 2002b; Torgerson *et al*, 2003).

Applying the CONSORT guidelines to the design of trials ensures that key methodological criteria, such as the method of randomisation, are explicitly reported. This allows the reader to judge whether or not the trial is of high quality. Because we have designed the Every Child Counts Trial 1 around the CONSORT statement this will ensure that it is conducted to the highest quality standards as well as being reported to these standards. Because this trial will be of such high profile we anticipate that an additional benefit of this study will be to promote the wider use of CONSORT in the design and reporting of social science trials.

## **RESEARCH ETHICS AND DATA MANGMENT**

As noted above, we will submit our research plans (Protocol) for the trial to The University of York Humanities and Social Science Ethics Committee for ethical approval (**note: ethical approval received 22/01/'09**). In principle, however, we do not anticipate any ethical barriers to the research. Data processing and management will abide by current data protection regulations. All data will be stored on secure servers that are password protected. The York Trials Unit has over 10 years' experience of securely storing health related data and we will follow their standardised operating procedures for secure data storage. All electronic data can be held indefinitely. We will use the SRA research ethics framework (see Appendix B for full data protection issues).

### **December 2008**

- Submit Trial Protocol to Operational Group for comments.

### **Jan/Feb 2009**

- Submit revised Trial Protocol to Operational Group for approval
- Submit Trial Protocol to Research Ethics Committee, University of York for approval
- Start recruitment of schools
- Trial 1 conference at DCSF to launch trial: 09/02/'09 (all Headteachers and Numbers Count teachers in trial)

### **Mar/Apr/May/Jun/Jul 2009**

- Submit Trial Protocol to ECC Advisory and Evaluation Research Advisory Groups for approval
- Trial co-ordinator works with schools to set up procedures for the trial including recruitment, consent, selection, randomisation, pre-testing, post-testing, data collection, attrition etc.

### **September 2009**

- Pre-testing of all children
- Randomisation (Trials Unit)

### **Dec 2009/Jan 2010**

- Post-testing of all children
- Post-testing for wider outcomes (quantitative)
- First analysis

### **Mar/Apr 2010**

- Post-testing 2 of all children

### **May to July 2010**

- Post-testing 3 data
- Second analysis

### **October to December 2010**

- Meeting of Research Advisory Group
- Submit draft of Final Report to Operational Group, Advisory Group and Research Advisory Group
- Submit Final Report

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## **Appendices\***

**Appendix A: Trial Design Diagram**

**Appendix B: Data Protection Issues Document**

**Appendix C: Invitation to Trial 1 Conference: Morning Session**

**Appendix D: Invitation to Trial 1 Conference: Afternoon Session**

**Appendix E: Information Sheet/Consent for Parents**

**Appendix F: Summary Information Sheet for Headteachers and Numbers Count Teachers**

**Appendix G: Detailed Information Sheet for Headteachers and Numbers Count Teachers**

**Appendix H: Information Sheet for Children**

**Appendix I: Introductory Letter to National Trainers and Teacher Leaders**

**Appendix J: Consent Form for Schools**

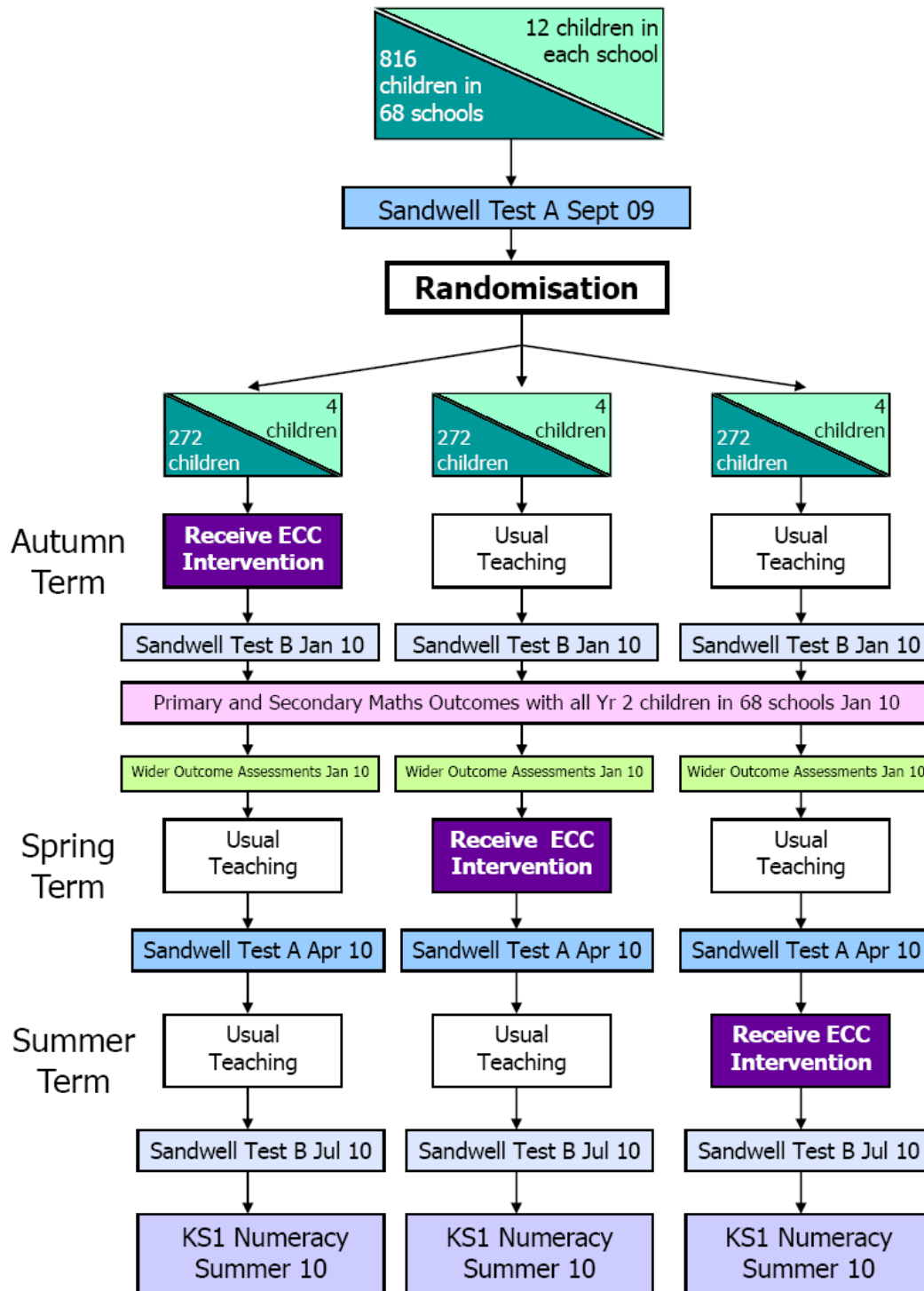
**Appendix K: Flow of Actions**

**Appendix L: FAQs Following Trial 1 Conference**

\*Please note the appendices provided in this document were correct at the time of distribution to teachers/Headteachers; some of the information has changed and this will be communicated as appropriate.

## Appendix A: Trial Design Diagram

### ECC Trial 1 Design (2009/10)



## **Appendix B: Data Protection Issues Document**

### **Evaluation of Every Child Counts**

#### **Data Protection Procedures**

The level of security necessary for this evaluation is '**RESTRICTED**'. This is because it is an evaluation of a sensitive policy intervention, and involves individual case details in Trial 1. Compromise of data collected and analysed in the evaluation could disadvantage the government in policy development, or could cause distress to individuals.

Below we provide a detailed general statement on our data security policy during data collection and analysis and arrangements for the safe and secure transfer of data. These measures will ensure that we comply with the Data Protection Act 1998.

#### **Detailed general statement**

The University of York shall observe its obligations under the Data Protection Act 1998 and shall comply at all times with the Act.

All hard and electronic data will be marked 'Restricted'. We will store all hard data at York protected by at least two barriers within a secure building (locked filing cabinet or container within locked office in secure building). When we dispose of the hard data we will either shred within the office or dispose through the waste disposal bags marked 'confidential disposal'. All electronic data will be stored on restricted access/password protected files. Access will be restricted to members of the evaluation team (4 core members plus statistician and economist). When we dispose of electronic data we will delete all copies including data stored on USBs. If we need to transfer the data internally at either institution we will do so by e-mail or in double sealed envelopes; if we need to transfer data between the two institutions we will do so either by e-mail or by special delivery or secure courier. Discussions about the restricted data will always take place face-to-face and not on the telephone. Data will not be faxed. If any of the core team members or statistician or economist works from home or when travelling this will only be permitted with the lead applicant's permission, and compliance with all measures above will be required. Photocopying will be permitted, but this will be restricted to essential copies only and circulation will be restricted.

#### **Detailed specific arrangements**

This will involve:

Recruitment of schools, randomisation of pupils, data collection (Sandwell Test results A and B pre-, post, and follow-up tests, KS2 data), data analysis for Trial 1 (overall mean effect sizes with confidence intervals; sub-group analyses) and economic evaluation.

All recruitment, randomisation, data collection and data analysis procedures during the trial phase of the evaluation as outlined in this document will be followed. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.). All electronic personal data will be stored separately from test data. Test data will only be linked to unique pupil numbers.

In addition, informed, positive consent will be obtained from all participants using an opt-in clause in the consent document relating to participation in the intervention. An information sheet will also be given to all participant children, teachers and head teachers which will outline the purpose(s) for which we are gathering or processing their data, who will hold it, if it will be disclosed to anyone, how long it will be retained etc and what will happen to it.

Electronic data will be stored on access protected personal computers and only authorised York staff will have access (3 core team members CT, HA and CH). Backups will be made on secure servers at York. Written notes will be stored when not in use in locked filing cabinets. Generally these will be copied to computer files, after which the notes will be destroyed. Any hand written notes not transferred will be destroyed six months after the end of the project. Electronic data will be retained on the secure servers at York indefinitely.



## **Appendix C: Invitation to Trial 1 Conference: Morning Session**

[date]  
Dear

### **Evaluation of Every Child Counts: invitation to a conference for schools Monday 9 February 2009, Westminster, London**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

Your school has been selected to participate in one strand of the evaluation: a randomised controlled trial to investigate the impact of ECC on pupil outcomes.

#### **Why is the evaluation important?**

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact of ECC.

#### **What does the trial involve?**

The trial your school will be involved in will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by children who receive the intervention with those who have not yet received it. The 12 children you select to receive the intervention during the school year 2009-10 will be randomly allocated by the University of York to receive tuition in either Autumn 2009, Spring 2010 or Summer 2010. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These two changes to the normal delivery of the intervention are essential in order to ensure a robust assessment of the intervention's effectiveness.

#### **How do we find out more?**

The University of York will run a conference in February for all head teachers and Numbers Count teachers of participating schools, plus Teacher Leaders for participating LAs. We are therefore writing to invite you and your Numbers Count teacher to attend the conference on **Monday February 9<sup>th</sup> 2009** at the DCSF, Sanctuary Buildings, Great Smith Street, London, SW1P 3BT.

We will present the design of the study in detail and outline the minimal changes to the way in which the intervention will need to be delivered in your school for the purposes of the evaluation. We will also be available to answer any of your questions. The Agenda for the conference is given below.

Please confirm your attendance at the conference by contacting Hannah Ainsworth (by e-mail or telephone, details below) by [date]. Once you have confirmed attendance we will send out a map showing the venue, and an information sheet about the trial.

There will also be time at the conference for you to meet head teachers and Numbers Count teachers from participating schools from other local authorities, over lunch.

## **Agenda for conference**

10.00 Registration/tea and coffee

10.30 Presentation by the University of York evaluation team, followed by discussion/questions

12.30 Lunch

1.30 Close

We look forward to meeting you on February 9<sup>th</sup>.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

01904 328158

## **Appendix D: Invitation to Trial 1 Conference: Afternoon Session**

[date]

Dear

### **Evaluation of Every Child Counts: invitation to a conference for schools Monday 9 February 2009, Westminster, London**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

Your school has been selected to participate in one strand of the evaluation: a randomised controlled trial to investigate the impact of ECC on pupil outcomes.

#### **Why is the evaluation important?**

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact of ECC.

#### **What does the trial involve?**

The trial your school will be involved in will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by children who receive the intervention with those who have not yet received it. The 12 children you select to receive the intervention during the school year 2009-10 will be randomly allocated by the University of York to receive tuition in either Autumn 2009, Spring 2010 or Summer 2010. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These two changes to the normal delivery of the intervention are essential in order to ensure a robust assessment of the intervention's effectiveness.

#### **How do we find out more?**

The University of York will run a conference in February for all head teachers and Numbers Count teachers of participating schools, plus Teacher Leaders for participating LAs. We are therefore writing to invite you and your Numbers Count teacher to attend the conference on **Monday February 9<sup>th</sup> 2009** at the DCSF, Sanctuary Buildings, Great Smith Street, London, SW1P 3BT.

We will present the design of the study in detail and outline the minimal changes to the way in which the intervention will need to be delivered in your school for the purposes of the evaluation. We will also be available to answer any of your questions. The Agenda for the conference is given below.

The DCSF will cover reasonable travel expenses for attendees from schools outside the London region (e.g. standard class rail travel). This can be claimed after the event and proof of purchase must be retained. We would be grateful if you could book off-peak/saver tickets wherever possible.

Please confirm your attendance at the conference by contacting Hannah Ainsworth (by e-mail or telephone, details below) by [date]. Once you have confirmed attendance we will send out a map showing the venue, and an information sheet about the trial.

There will also be time at the conference for you to meet head teachers and Numbers Count teachers from participating schools from other local authorities, over lunch.

**Agenda for conference**

12.30 Registration/Lunch

1.30 Presentation by the University of York evaluation team, followed by discussion/questions

3.30 Close

We look forward to meeting you on February 9<sup>th</sup>.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

01904 328158

## **Appendix E: Information Sheet\*/Consent for Parents**

\* Note: This information to be given to the parents or carers when a child has been selected to take part in Numbers Count at the Numbers Count discussion, and the information in it should be included in the discussion.

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## **Independent Evaluation of Every Child Counts**

### **Information Sheet for Parents**

The Universities of York and Durham have been asked by the Department for Children, Schools and Families (DCSF) to evaluate the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

Your child's school has been chosen to take part in one part of the evaluation: a randomised controlled trial to investigate the impact of Numbers Count lessons on children's maths skills and confidence. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects.

#### **Why is the evaluation important?**

The findings of the evaluation will help government make sure the Every Child Counts programme works well before it is made available to children across the country, so your child's participation in the trial will be very important in helping to develop the programme.

#### **What does the trial involve?**

The trial your child's school will be involved in will assess the effectiveness of the Numbers Count intervention. We will be able to measure how effective Numbers Count is by comparing the improvement made by 4 children in each school who have had Numbers Count in the Autumn term with 8 children who have *not yet* received it (but who will receive it in the Spring or Summer term).

#### **What will this mean for my child?**

Your child will receive the Numbers Count intervention in the normal way with one change. The school term in which he/she receives it (autumn, spring or summer) will be decided by the evaluation team rather than by the school. Some small amount of additional assessment (maths and confidence/well-being) of the children may be necessary, but we will work very closely with your child's school to ensure that any additional burden on the children will be minimal. Your child's name will not be used anywhere in the evaluation.

#### **What will happen to the children's assessments?**

All assessments will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

If you would like to contact the researchers to discuss anything please contact Hannah Ainsworth (Trial Co-ordinator) at the University of York in the first instance ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

## Evaluation of Every Child Counts: Trial 1

### Consent for parents\*

\*Note: This information to be added to the Home School contract

I give permission for..... to take part in Numbers Count at.....School and for his/her (*please delete*) test results to be included anonymously in the independent evaluation being carried out by the University of York and Durham University.

---

### Numbers Count Home School Contract

#### PARENT / CARER

I give permission for ..... to take part in Numbers Count at ..... School and for his/her (*please delete*) test results to be included anonymously in the independent evaluation being carried out by the University of York and Durham University.

I will give my support by making sure that he/she:

- attends school regularly and arrives on time
- has support at home with maths games and activities for homework.

Name:

Signed:

Date:

#### SCHOOL

The School agrees to:

- provide daily, individual mathematics lessons
- give home activities which are related to the work that has been taught
- keep the parent / carer informed of progress made by the child.

Name:

Signed:

Date:

## Appendix F: Summary Information Sheet for Headteachers and NC Teachers

### Summary Information Sheet for Headteachers and Numbers Count Teachers

#### Evaluation of Every Child Counts: Trial 1

##### Background

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an intervention delivered to pairs or triplets of children by Numbers Count teachers.

Your school has been selected to be included in the sample of about 68 schools which will take part in Trial 1.

##### Trial 1

Trial 1 has been designed to investigate the impact of the Numbers Count intervention on pupil outcomes. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects. We will be able to measure how effective Numbers Count is by comparing the improvement made by 4 children in each school who will receive the intervention in the *Autumn term* with 8 children in each school who have *not yet* received Numbers Count (but who will receive it in the Spring or Summer term).

In most respects the delivery of Numbers Count will be exactly the same as usual; however, so that a rigorous evaluation can be conducted some changes are required. We have tried to minimise these changes as much as possible. Appendix A details the actions that are required by each school taking part in Trial 1. Actions that are a part of the normal delivery of Numbers Count are shown in yellow. Actions which are required for the evaluation are shown in green. The diagram also shows the actions being taken by the York evaluation team, shown in purple.

##### Ethical Issues

All information and test results collected during the trial will remain confidential and will be stored according to data protection guidelines. No names or other identifying information will be used in any reporting. This evaluation has received ethical approval from the Humanities and Social Sciences Ethics Committee at the University of York.

The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact for any queries about the conduct of the trial (see below for contact details). Please feel free to get in contact with any queries or questions throughout the duration of the trial.

##### Evaluation Team

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## Appendix G: Detailed Information Sheet for Headteachers and NC Teachers

### Detailed Information Sheet for Headteachers and Numbers Count Teachers

#### Evaluation of Every Child Counts: Trial 1

##### Background

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

One strand of the evaluation is a randomised controlled trial (Trial 1) to investigate the impact of the Numbers Count intervention on pupil outcomes. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects. We will be able to measure how effective Numbers Count is by comparing the improvement made by 4 children in each school who will receive the intervention in the *Autumn term* with 8 children who have *not yet* received it (but who will receive it in the Spring or Summer term).

##### What happens next?

- The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact for any queries about the conduct of the trial (see below for contact details).
- The Trial Co-ordinator (Hannah Ainsworth) will contact each school at the beginning of the Autumn Term 2009 with: the paper based/online survey for teachers and instructions of how to complete this; the 12 parental consent forms; a form on which to record names and UPNs of 12 NC children; and the template for the Sandwell A test results.

##### Selection of 12 children

- (In the Summer Term 2009 each school will select 15 children eligible for NC.)
- In September 2009 each school will make the final selection of 12 children who will receive Numbers Count (before the pre-testing begins).
- The evaluation will be explained and discussed by the NC teachers with parents/carers at the routine NC meeting (Note: we have provided an Information Sheet for parents and a parental consent form to cover the evaluation aspect of NC. For the purposes of the evaluation gaining a signed parental consent form is compulsory).
- The school returns signed parental consent forms and the pupil names and UPNs form (12 NC children) to The Trial Co-ordinator (Hannah Ainsworth) using an appropriate method to be confirmed at a later date.

##### First evaluation test

- Teachers go through Information Sheet for children with each child before testing.
- In September **ALL** 12 children will be tested using Sandwell A (Numbers Count teacher).
- The Trial Co-ordinator (Hannah Ainsworth) will provide each school with forms for recording each of the 12 NC children's name (optional), pupil ID and Sandwell A.



- When completed, this will be returned to The Trial Co-ordinator (Hannah Ainsworth) using an appropriate method to be confirmed at a later date.
- Note: Enter Sandwell A test results for children receiving NC online as normal.

### **Random allocation**

- The 12 children will be allocated at random to receive the NC intervention in the Autumn, Spring or Summer terms by a member of the evaluation team.
- The Trial Co-ordinator (Hannah Ainsworth) will inform each school of the allocations.
- The allocations must NOT be changed as this would jeopardise the results of the evaluation.

### ***Why is random allocation important?***

Random allocation is important because it is the best method of ensuring that the groups of children receiving the intervention at the different time points are balanced in all respects. This means that when we compare the outcomes for the pupils who *have* received the intervention with those who *will* receive the intervention in a subsequent term we are making a fair comparison and can be sure that any improvement we see in the intervention children is due to NC and not some other factor.

### ***Who will do the random allocation?***

The random allocation will be done by the independent third party Trial Statistician at the University of York, using pupil ID only (not names).

### ***How will the random allocation be done?***

The random allocation will be done using a computer software package.

### **Delivery of intervention – Autumn Term**

- The 4 children allocated to Autumn Term will receive the intervention as usual.

### **Second evaluation tests**

- In January 2010 **ALL** 12 children will be tested using Sandwell B.
- In January 2010 an additional test will be carried out with ALL Yr 2 children (with school's assistance).
- The Trial Co-ordinator (Hannah Ainsworth) will provide each school with forms for recording each of the 12 NC children's name (optional), pupil ID and Sandwell A.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- In January 2010 NC teachers schools will be asked to record the wider outcomes assessment (optional).

### **Delivery of intervention – Spring Term**

- The 4 children allocated to Spring Term will receive the intervention as usual.

### **Third evaluation test**

- In April 2010 **ALL** 12 children will be tested using Sandwell A.

- The Trial Co-ordinator (Hannah Ainsworth) will provide each school with forms for recording each of the 12 NC children's name (optional), pupil ID and Sandwell A test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.

#### **Delivery of intervention – Summer Term**

- The 4 children allocated to Summer Term will receive the intervention as usual.

#### **Fourth evaluation test**

- In July 2010 **ALL** 12 children will be tested using Sandwell B.
- The Trial Co-ordinator (Hannah Ainsworth) will provide each school with forms for recording each of the 12 NC children's name, pupil ID and Sandwell B test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator (Hannah Ainsworth) will collect KS1 assessments for ALL 12 children..

The additional testing of the children is necessary, but we will work very closely with schools to ensure that any additional burden on the teachers and children will be minimal.

## Trial 1 Testing/Assessment Requirements

| Pupils                                      | First Evaluation test<br>September 2009 | Second Evaluation tests<br>December 2009/January 2010 | Third Evaluation test<br>April 2010 | Fourth Evaluation test<br>July 2010 |
|---|---|---|-------------------------------------|-------------------------------------|
| 4 Children receiving NC in Autumn Term 2009 | Sandwell A (Entry)                      | Sandwell B (Exit)                                     | Sandwell A (3 month)                | Sandwell B (6 month)                |
|   |   | Additional maths test                                 |                                     |                                     |
|   |   | Wider outcomes assessments (optional)                 |                                     |                                     |
| 4 Children receiving NC in Spring Term 2010 | Sandwell A                              | Sandwell B (Entry)                                    | Sandwell A (Exit)                   | Sandwell B (3 month)                |
|   |   | Additional maths test                                 |                                     |                                     |
|   |   | Wider outcomes assessment (optional)                  |                                     |                                     |
| 4 Children receiving NC in Summer Term 2010 | Sandwell A                              | Sandwell B  | Sandwell A (Entry)                  | Sandwell B (Exit)                   |
|   |   | Additional maths test                                 |                                     |                                     |
|   |   | Wider Outcomes assessment (optional)                  |                                     |                                     |
| All Yr 2 children 2009/10                   |   | Additional maths test                                 |                                     |                                     |

|   |
|---|
| <b>Normal Practice and required by Evaluation</b>           |
| <b>Additional testing/assessment required by Evaluation</b> |

### Five changes to normal delivery of the Numbers Count intervention

- All 12 NC children to be tested using Sandwell A and B at four time-points
- Addition of second maths test for all Yr 2 children in January 2010
- Addition of wider outcomes test (optional)
- Random allocation to Autumn, Spring, Summer term
- Exit will always be at the end of the allocated term.

### Frequently asked questions

#### ***What happens if a school thinks a child needs the intervention in a particular term and therefore should not be randomised?***

It would be possible to exclude a child from the random allocation but the child would not then receive the intervention unless the school can create an additional slot. This is strongly discouraged because it will limit the generalisability of the results to all children.

***What happens if a child due to receive the intervention moves school or is ill during the trial?***

If a child moves school the child will be followed-up by Trial Co-ordinator to the new school. The school will allocate another child to replace the child who has left - this must NOT be one of the 8 remaining children, but a 13th child in the school – this new child will NOT be in the trial.

If a child is ill and doesn't receive the intervention the child will remain in the trial. If another child replaces an absent child this must NOT be one of the 8 remaining children, but a 13th child in the school – this new child will NOT be in the trial.

***What happens if the NC teacher believes a child needs more than one term of NC?***

For the purposes of the evaluation it is vital that the exit is consistent for every child in the trial. Therefore extension of NC is not possible for any child during Trial 1.

**What will happen to the trial data?**

All test results will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

**Evaluation Team**

*Please feel free to get in touch with the Evaluation team with any questions, queries or concerns throughout the duration of the trial.*

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## Appendix H: Information Sheet for Children

THE UNIVERSITY *of York*

### Numbers Count Research

#### Information for children\*

Some people (researchers) at the Universities of York and Durham have been asked by the government – the Department for Children, Schools and Families (DCSF) to find out how good Numbers Count is at helping children to get better at numeracy.

Taking part in the research might mean that your teacher does some extra work with you to find out how you are getting on with your learning.

Your teachers will tell the people at the University how you are getting on before and after you do Numbers Count. This is very important work because it will help the government to know how to help all children in the country get better at maths.

When the researchers tell the government what they have found out they won't put your name in the report.

The researchers will keep the work you have done safely at the University of York.

Thank you very much for helping.

*\* (To be read to the Numbers Count Pupil by the Numbers Count Teacher: See also the teacher information sheet to explain any other points)*

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## Appendix I: Introductory Letter to National Trainers and Teacher Leaders

19.01.09

Dear National Trainer/Teacher Leader

### Evaluation of Every Child Counts

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

The aim of this letter is to inform you, as National Trainers and Teacher Leaders, about the background to and aims of the evaluation, since a number of schools will be involved in different elements of the evaluation.

#### Why is the evaluation important?

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the effectiveness of ECC.

There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an intervention delivered to pairs or triplets of children by Numbers Count teachers compared with one-to-one delivery of Numbers Count.

#### What does Trial 1 involve?

68 schools in the Local Authority areas of Middlesbrough, Kent, Southwark, Norfolk, Birmingham, and the Hackney Learning Trust and Tower Hamlets have been selected to take part in Trial 1.

Trial 1 will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by 4 children in each school who will receive the intervention in the *Autumn term* with 8 children in each school who have *not yet* received it at Christmas (but who will receive it in the Spring or Summer term).

The 12 children selected by each school to receive Numbers Count during the school year 2009-10 will be randomly allocated by the University of York to receive Numbers Count in either Autumn 2009, Spring 2010 or Summer 2010. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These two changes to the normal delivery of the intervention are essential in order to ensure a robust assessment of the intervention's effectiveness.

We have invited the Headteachers and Numbers Count teachers at each of the 68 schools involved in Trial 1 to attend a conference on **Monday February 9<sup>th</sup> 2009** at the DCSF, to find out more about Trial 1. We will be presenting the design of the study in detail and outlining the minimal changes to the way in which the intervention will need to be delivered in schools for the purposes of the evaluation. We will also be available to answer any questions.

## **What does Trial 2 involve?**

40 Schools in four Local Authority areas will be selected to take part in Trial 2.

Trial 2 will assess the impact on attainment in mathematics of the Numbers Count intervention when it is delivered *individually to one child*, and when trained Numbers Count teachers adapt their methodology to deliver an intervention to *groups of (two or three) children*. In 20 schools we will compare one-to-one delivery of the Numbers Count intervention versus one-to-two delivery of an adapted intervention; and in a further 20 schools we will compare one-to-one delivery versus one-to-three delivery of an adapted intervention.

The children selected by each school to receive Numbers Count during the school year 2009-10 will be randomly allocated by the University of York to receive Numbers Count either as individuals, in pairs or in triplets. As in Trial 1 some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These changes to the normal delivery of the intervention are essential in order to ensure a robust assessment of the intervention's effectiveness when delivered to individual children, compared with delivery to pairs or triplets of children.

We will be inviting the Headteachers and Numbers Count teachers at each of the 40 schools involved in Trial 2 to attend a conference to find out more about Trial 2 later in the year. Like the Trial 1 conference this will be opportunity for us to present the design of the study in detail and outline the minimal changes to the way in which the intervention will need to be delivered in schools for the purposes of the evaluation, and provide an opportunity for questions.

## **What does the Process Evaluation involve?**

The aim of the process evaluation is to identify issues, positive and negative, about the programme. These will be fed back in a formative way to those responsible for the development and implementation of ECC, and will go on to form the basis of a research report for the DCSF. Unless specifically agreed this feedback will be anonymous. We will also look at other aspects of the process, such as the professional development and the role of local authorities.

The bulk of the research will be with 18 Schools from the Local Authority areas of Essex, Sunderland, Doncaster, Bradford, Bristol and the Hackney Learning Trust and Tower Hamlets.

The process evaluation will aim to understand how ECC is being implemented in schools, and ways in which the national programme might be improved. A number of visits will be made to schools to:

- Observe some Numbers Count sessions and how children then progress in their day to day class teaching
- Talk with Numbers Count teachers
- Talk to classroom teachers / support staff
- Talk to children
- Meet with some of the parents/carers of the children involved (possibly in a group setting)
- Talk to other staff in the school

We will be providing further information to the National Trainers and Teacher leaders on specific elements of the evaluation at a later date. In the meantime if you have any questions please feel free to get in touch.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

[cjt3@york.ac.uk](mailto:cjt3@york.ac.uk)

Dr. Andy Wiggins (Centre for Evaluation and Monitoring (CEM) Durham and Co-chief Investigator of the ECC evaluation)

[ecc@cem.dur.ac.uk](mailto:ecc@cem.dur.ac.uk)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

01904 328158

Dr. Patrick Barmby (Lecturer in Mathematics School of Education Durham University)

[ecc@cem.dur.ac.uk](mailto:ecc@cem.dur.ac.uk)



**Appendix J: Consent Form for Schools**

**Every Child Counts Independent Evaluation  
Trial 1**

**School Consent Form**

I confirm that I have read and understood the summary and detailed information sheets for the above evaluation and have had the opportunity to ask questions.

I understand that all the children's results will be kept confidential and that no material which could identify individual children or the school will be used in any reports of this evaluation, without my express permission.

I agree that my school will take part in the above study and support it to the best of our ability.

Please write in block capitals

Name of Headteacher.....

School.....

Tel No.....

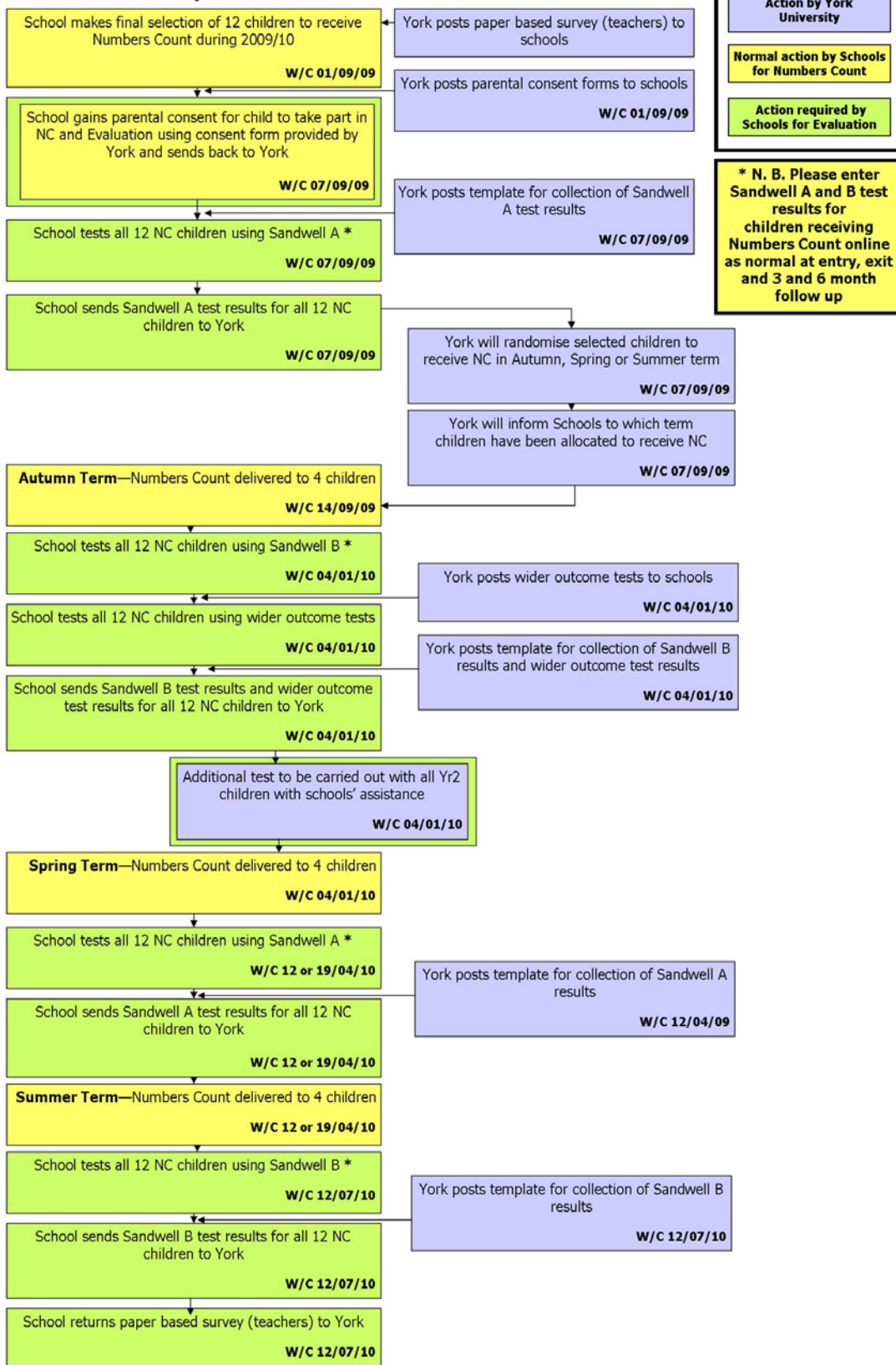
Email address.....

Signature of Headteacher.....Date.....

Thank you for agreeing to take part in this important research, please could you return this consent form to Hannah today or post it as soon as possible to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD

## Appendix K: Flow of Actions

### Flow of Actions Required for Trial 1



## **Appendix L: FAQs Following Trial 1 Conference**

### **Every Child Counts Evaluation: Trial 1**

#### **Frequently Asked Questions**

This document should be read alongside the Teachers' Information Sheet which was distributed at the Trial 1 conference on 9 February. If you need another copy, please contact Hannah Ainsworth.

##### **Questions about random selection**

As outlined in the Teachers' Information sheet the University of York will randomly allocate the 12 children to receive Numbers Count support in autumn, spring or summer term. It is crucial that the schools keep to this allocation as any change would jeopardise the quality of the evaluation. Whatever the makeup of the cohort of children (e.g. very high mobility cohort), the random allocation procedure will be the same for every school. It doesn't matter if the allocation looks unbalanced e.g. four boys in the autumn term and four girls in the summer term. Over the whole sample of 50 schools differences will even out to ensure we are comparing similar groups.

If a new child comes into the school during the year who is eligible for NC the school may choose to allocate the child to receive NC support but the results of that child would not be included in the analysis. The school would need to create a 13<sup>th</sup> slot if they wanted this child to receive NC support; this could be in any term. If one of the original children receiving NC support has left the school, the new child could take their place, but again their results would not be included in the analysis.

If the random selection by chance leads to all four of the lowest performing children being allocated to receive the intervention in the same term, and the NC Teacher has concerns about this we would ask the teacher to contact the Trial Co-ordinator to discuss this situation.

##### **Questions about Consent**

It is very important for ethical reasons that we receive informed consent from schools and parents.

Schools do not have to take part in the evaluation. We are aware that your involvement will result in some extra work and changes to normal practice but we hope that you will recognise the importance of the research and look forward to being involved.

The University of York will provide schools with parental information sheets and consent forms. It is very important for the purposes of the evaluation that parents give informed consent for their child to receive Numbers Count *and* to be included in the evaluation. If a parent refuses to give consent for their child to be included in the evaluation but does give consent for their child to receive Numbers Count then the child will receive Numbers Count; however, their results will not be included in the analysis. We would appreciate it if schools make every effort to explain the importance of the research to the parents and reassure them that their children's results will be used anonymously. It is very important that as far as possible every child who is identified for Numbers Count by the school is included in the evaluation. If a parent still has concerns he/she is very welcome to contact Hannah Ainsworth or Carole Torgerson at the University of York to discuss the evaluation further.

## Questions about EAL Students

Edge Hill University advises that Numbers Count is appropriate for almost all children, including most children for whom English is an additional or second language. We therefore advise that the 12 children selected by schools for Numbers Count (who will be randomised by the University of York) *can* include children for whom English is an additional/second language. We anticipate that in a very small number of cases, professional judgement may suggest that an individual child may benefit more from Numbers Count later on in the year when the child's English has improved. Consequently schools may, in an exceptional case, decide to exclude a child from randomisation. In this case we would suggest that you do not select the child as one of the 12 children to receive Numbers Count. If you still want this child to receive Numbers Count an additional 13<sup>th</sup> slot would have to be made available for the child by the school. Schools may find that, by the summer term, a child originally selected for Numbers Count has left the school, in which case the EAL child could take their place. (N.B. Their results would not be included in the analysis). If you are unable to provide a 13<sup>th</sup> slot, please consider whether it would be better for the child to receive Numbers Count at any point in the year or not at all.

## Questions about Testing

### Sandwell Tests for children taking part in Numbers Count

For the purposes of the evaluation *all* 12 children selected for Numbers Count need to be tested using the Sandwell tests at four time points during the school year 2009/10. It takes approximately 30 mins to conduct a Sandwell test with an individual child.

The Sandwell A test is currently in use as part of the Numbers Count programme. Sandwell B is currently being developed. This test will be exactly the same in style and coverage as Sandwell A; however, the questions will be different to provide the children with variation. As soon as Sandwell B is available we will let you know. The Sandwell tests have been chosen by the evaluation team because they are already in use as part of the normal delivery of Numbers Count. However it will be necessary to include a second independent measure of maths achievement (probably the NFER test – see below) in order that the evaluation is as high quality as possible.

The Sandwell tests are available on CD, so each school will need to print extra copies in order to test all 12 children at the four time points.

In the normal delivery of Numbers Count, Sandwell A is conducted by the Numbers Count Teacher when a child enters Numbers Count and conducted by the Link Teacher when the child exits Numbers Count. For the purposes of the evaluation, in order to spread the extra burden of testing all 12 Numbers Count children at 4 time points during the year, the Sandwell tests can be conducted by either the Numbers Count Teacher or by the Link Teacher at each point. A school is also able to train up a teaching assistant to conduct the Sandwell tests if they feel this would be helpful.

The entry and exit Sandwell tests are included in the 12 weeks of Numbers Count. Additional pre-tests and follow-up tests are not part of NC.

The testing to be completed for all 12 children does not include the diagnostic assessment; this is part of Numbers Count and is only conducted on the children receiving the Numbers Count intervention each term. Diagnostic assessment does therefore not have to be completed by 14.09.09.

Testing of the 12 children using Sandwell A in September needs to be completed as quickly as possible so that the 12 children can be randomised and the four children allocated to receive Numbers Count in the Autumn term can begin receiving Numbers Count in time for them to receive 12 weeks of Numbers Count before Christmas. Some schools have raised the concern that testing at the beginning of term is not reliable in schools with a large

percentage of EAL children, as the children need time to adjust back to the spoken English environment. In this case testing could be conducted in the second week back but we would ask that it is done as soon as possible in order that the children allocated to Autumn term can receive the full 12 weeks of Numbers Count.

We will provide templates for the assessment results of all 12 children to be sent to York. For Edge Hill requirements normal online data entry procedures will apply. This means that a small amount of data will be entered twice, but we hope this will be simpler than having to remember which test results are additional to the ones required for Edge Hill.

### **Wider Outcomes for children taking part in Numbers Count**

We will ask all schools to use some rating scale assessments for all 12 children taking part in Numbers Count in January 2010. These assessments will be optional; however we would be very grateful if you feel able to complete them, as they will provide us with further information about the wider effects that Numbers Count has on the children's emotional health and wellbeing. We will be able to give feedback to individual schools on their children's results. The choice of assessment tools has not been completely finalised yet; we will provide more information about this before the summer break.

### **Test for all Year 2 children**

We will be conducting independent tests with all children in Year 2 in January 2010. We will arrange for an independent person to visit each school; this independent tester will provide the tests, conduct the tests and collect the test papers. Researchers at the University of York or Durham will mark the tests. We will provide individual schools with their children's scores. Following your feedback at the Conference one of the tests will probably be the NFER Progress in Maths test. If schools are happy to also give the NFER test to all Year 2 children in September and later in the school year these results would be very helpful to the evaluation.

The independent tester will also conduct a very short maths test with the children and may also conduct a wider outcomes assessment with all Year 2 children.

### **Questions about Funding**

Unfortunately there is no additional funding available to cover the extra work that taking part in the trial will involve. However we hope that you will agree that the results of this trial will be very important and feel able to take part. You may not be aware that the first schools to deliver Numbers Count receive greater funding than schools that joined the programme at a later time have been entitled to.

### **Questions about normal delivery of Numbers Count**

With the exception of assessment and exit at the end of term for all children, once children start Numbers Count delivery is normal. Some group teaching is allowed in the normal delivery of Numbers Count. Teachers should continue to do this. Numbers Count Attitude Surveys and classroom observations should be carried out as normal.

### **Questions about poor attendance**

Pupils should not be excluded if they have poor attendance. We will be collecting data from the National Pupil Database about attendance and use this as one of our variables in the analysis.

### **Questions about children also receiving Reading Recovery**

If some/all the children identified by your school to receive Numbers Count are also going to begin Reading Recovery in Year 2, we would ask you to wait until we have let you know the allocation for the NC children and then use this information to inform decisions about when the Reading Recovery children should begin their Reading Recovery programmes. In some cases you may have children who began Reading Recovery in Year 1 and need to continue in September of Year 2, and who have also been randomised to receive Numbers Count in the autumn term. If you have any concerns about this, please contact the Trial Coordinator to discuss.

### **Questions about the wider influence of NC**

The wider influence of the Numbers Count Teacher may affect 'normal' class teaching in the ECC schools. This is an important factor. We will not be looking at this in Trial 1, but we will be exploring this factor in other aspects of the evaluation.

*Thank you for all your excellent questions. If, at any time during the year, you have other questions about the evaluation, please do not hesitate to contact Hannah Ainsworth or Carole Torgerson. One of us will be available to respond within 24 hours at all times. If you have any questions about the normal delivery of Numbers Count please contact your Teacher Leader or National Trainers at Edge Hill University.*

## Appendix 2: Ethics Submission

# THE UNIVERSITY *of York*

## Humanities and Social Sciences Ethics Committee

### SUBMISSION FORM

*Please refer to the Guidance Notes at the end before filling in this form*

**NB** If you are collecting data from NHS patients or staff, you will need to apply for approval through NRES (National Research Ethics Service) at <http://www.nres.npsa.nhs.uk/applicants> (formally COREC- the Central Office for Research Ethics Committees). Please fill in the NRES form NOT this one and send your completed NRES form to HSSEC.

**1. Please provide the following details about the principal investigator.**

|                         |   |
|-------------------------|---|
| Name                    | Carole Torgerson (PI and contractual contact) |
| Post                    | Reader  |
| Qualifications          | BA, MLitt, EdD                                |
| Organisation            | IEE, University of York                       |
| Address of Organisation | ARRC, Alcuin, Heslington, York                |
| Email                   | cjt3@york.ac.uk                               |
| Telephone               | 328152  |

**2. If the research is being undertaken as part of an educational course, please provide the following details.**

|   |  |
|---|--|
| Name and level of course/degree               |  |
| Name and address of educational establishment |  |
| Name and contact details of supervisor        |  |

**3. Please list any other key collaborators or key members of the research team.**

|                         |                                   |
|-------------------------|-----------------------------------|
| Name                    | Andy Wiggins (joint co-applicant) |
| Post                    | Project Manager                   |
| Qualifications          | PhD                               |
| Organisation            | Durham University                 |
| Address of Organisation |                                   |
| Email                   | andy.wiggins@durham.ac.uk         |
| Telephone               |                                   |

**4. Please state the full title of the research.**

National Evaluation of Every Child Counts

**5. Please state source of any funding for the research.**

DCSF

**6. Are any ethical concerns / conflicts of interest likely to arise as a consequence of funding source (with respect to your own work or that of other individuals/departments within in the University).**

No

**7. Please explain the principal research question addressed by the research.**

The principal research question addressed by the research is to evaluate the impact and delivery of Every Child Counts (ECC), an intensive support intervention for the lowest attaining children in mathematics in Key Stage 1 (KS1), during its development phase in academic years 08/09 and 09/10. The evaluation will:

- provide robust impact data (including value for money assessments) to assess the effectiveness of the programme for improving children's attainment in mathematics; and
- provide formative feedback on the delivery of the development phase during the course of the evaluation, to inform future development of the intervention, associated training, and leadership and management of the programme.



**8. Please explain secondary research questions and objectives addressed by the research.**

The secondary research questions and objectives are as follows:

- To assess the impact of intensive one-to-one teacher support on children's progress and attainment in mathematics, as an immediate outcome of the intervention, and in terms of attainment at the end of KS1.
- To assess the impact on children's progress and attainment and relative value for money of intensive support teaching in small groups versus a one-to-one model, as an immediate outcome of the intervention and in terms of attainment at the end of KS1.
- To assess the impact of the intervention on children's attitudes to learning in general, particularly mathematics learning, as well as their self-confidence, attendance and behaviour in class.
- To identify key features of the effective implementation of the programme, with a focus on the training and support provided to Teacher Leaders, teachers and teaching assistants, and the leadership and management of the work at all levels.
- To identify challenges to effective implementation of the programme in schools and local authorities, and how the national Every Child Counts partnership, local authorities and schools can overcome them.
- To identify the key features of the effective implementation of a small group intervention model.
- To identify the key elements that make intensive support teaching itself effective, both over the course of the intervention and in relation to whether children maintain the gains they have made once the intervention is over.
- To identify the key factors which enable the teachers trained to deliver Every Child Counts to have a wider impact of learning, teaching and mathematics standards in their schools.

**9. Please explain the scientific justification for the research, including relevant background, explaining why it is an area of importance.**

### **Background and rationale for the research**

The relative improvement of primary mathematics teaching is widely accepted and to be applauded, with the number of 11 year-olds gaining level 4 and above at Key Stage 2 having risen from 59% percent in 1998 to the current figure of over 77%. However, the picture for low achieving pupils is rather bleak and of widespread concern. Since 1998 the number of children failing to achieve level 3 has remained at about 6% - i.e. whilst the majority of children have improved, the lowest performing children have remained at much the same level.

There are many harmful consequences of low attainment in maths, both in the short term, for example, not being able to access many areas of the curriculum (as well as maths itself) and the potential negative social consequences; and in the longer term, difficulties at secondary school and into adulthood, as well as limitations in terms of the skills of the UK workforce. Indeed, a slightly higher proportion than the 5% of low attaining pupils at KS1 go on to leave secondary education with no qualification in mathematics.

It is widely agreed that a child who is having significant difficulties at an early stage (i.e. KS1) is likely to under-achieve in mathematics throughout their school life, and beyond. To help address these problems the Primary National Strategy (PNS) introduced the three wave model of intervention, with the lowest performing (wave 3) children receiving personalised and individual remedial teaching.

More recently the Every Child Counts (ECC) initiative has been developed by a partnership consisting of a coalition of business partners and charitable trusts (the Every Child a Chance charity) and the Government. Every Child Counts has two main aims – developing and supporting wave 3 interventions for the bottom 5% of KS1 children, and supporting less intensive (Teaching Assistant led) interventions for the bottom 5-10% group.

Following a research phase, from which the findings are due to be reported soon (along with the Williams review) the initiative is about to move in to the development phase. This will continue up to 2010, with then a roll-out stage which will target the intervention at 30,000 children.

Every Child Counts provides an intensive one to one intervention for those children identified as low achievers (the bottom 5%). In practice it aims to raise their level of performance so that they achieve level 2B (or better) by the end of KS1 – in effect putting them on a par with their peers, and then able to continue to progress in maths in the normal mainstream class setting. The model for the 5-10% group is currently being investigated, as are options as to how the intervention can be delivered in small group settings.

There are two over-arching aims to this research:

- To provide robust impact data to assess the effectiveness of the Every Child Counts programme on improving children's attainment in mathematics - **Impact evaluations:**
- To provide formative feedback on the delivery of the development phase during the course of the evaluation, to inform future development of the intervention, associated training, and leadership and management of the programme **Process evaluations.**

The first (impact) aim will be met by way of two randomised controlled trials (RCTs) in Yr 2, preceded by and followed by secondary data analyses using the National Pupil Database (NPD) in Yr 1 and Yr 2. The second (process) aim will be met by an on-going programme of qualitative research which along with the findings from the impact evaluation will be used as the basis for the formative feedback. Finally a series of expert reviews will be produced so as to provide an overview of the Every Child Counts programme and to place it in the wider

educational context.

**PLEASE NOT THIS APPLICATION REFERS ONLY TO TRIAL 1 AND THE PROCESS EVALUATION. A SEPARATE APPLICATION WILL BE MADE FOR TRIAL 2 AND THE SECONDARY DATA ANALYSES IN MARCH 2009.**

**10. If the research has been done before, please explain why it should be repeated.**

N/A

**11. Please show how existing relevant evidence, especially systematic reviews, have been fully considered, for example by giving details of any search strategies that have been undertaken.**

N/A

**12. Please provide a brief summary of the method(s) of the research making clear what will happen to research participants, how many times and in what order.**

***Impact evaluation***

We have proposed four main parts to our approach:

***Part one***

***Yr 1 (2008-9) secondary data analyses***

The secondary analyses in Yr 1 will involve a comparison phase using national data and employing two designs: interrupted time series (ITS) design and case control design (CC). These analyses will use data from all of the intervention children in the Every Child Counts 2008-9 cohort schools, historical data from pupils in the same schools derived from the National Pupil Database and PLASC. We will assess the impact of one-to-one delivery of the Every Child Counts intervention compared with non treated controls using KS1 outcomes.

***Yr 2 (2009-10) secondary data analyses***

Further secondary analyses will be undertaken in Yr 2 of the evaluation which will employ the same designs as the analyses above (Yr 1) and these will help to provide data on the broader and longer term impact of the intervention.

***Parts two and three***

***The Trials (Yr 2 2009-10)*** – we have planned to undertake two separate stand alone trials to assess the impact of the programme, both at a policy level and in terms of the effect on different groups of children. We will also assess the impact of different delivery models.

***Part two***

***Trial 1*** will involve a focused impact/sustainability phase using an RCT design, and will include approximately 600 children from 50 schools. This will be an individually randomised trial using a wait list design. The focus will be to assess the impact of one-to-one delivery of the Every Child Counts intervention. We will also look at the relative effectiveness for the children of receiving the intervention in the first, second or third terms of the year, and we will look at the durability of the impact of the intervention (in terms of the outcomes at the end of the year by comparing the mean values for children receiving the intervention in the first term with the mean values for children receiving the intervention in the second and third terms). We will also assess the wider impact of the intervention by analysing the outcomes of the children in this cohort relative to their classmates (see wider impact – quantitative component).

**Part three**

**Trial 2** will be an impact/implementation study to assess the relative impact of the Every Child Counts intervention delivered using the one-to-one approach compared with group delivery to pairs of children or groups of three children, and will involve 40 schools. We will assess the range of impact of the intervention in terms of one-to-one delivery compared with delivery in groups of pupils (twos or threes) using an individually randomised controlled trial design.

**Part four**

**Process evaluation** – we will use a variety of interview and survey techniques, and the findings (augmented with the findings from the impact evaluations) will be used to provide ongoing formative feedback to the Every Child Counts project management throughout the project period. It will focus on training, teaching and organisational issues.

**Expert reviews** – these will draw together the findings from the trials and the formative feedback, as well as other existing and on-going research. These reviews will also help disseminate the findings through being a part of the final evaluation report.

**AS ABOVE - PLEASE NOTE THIS ETHICS SUBMISSION SEEKS APPROVAL FOR PARTS TWO AND FOUR ONLY (TRIAL 1 AND PROCESS EVALUATION). I WILL SUBMIT A SEPARATE APPLICATION FOR PARTS ONE AND THREE IN MARCH 2009.**

**13. Please describe your statistical (or equivalent) methods employed to analyse your results, including details of the randomisation process to be used, if applicable.**

Trial 1: See Trial 1 Protocol (attached) page 7

**STATISTICAL ANALYSIS**

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation. The primary outcome is the Sandwell test. The difference between the intervention group and the control group will be compared. We will undertake a regression analysis with the dependent variable as the post-test. As well as group allocation we will also include pre-test, age and gender as explanatory variables. School will also be included in the regression models. This is because the children will be clustered by school and there is a possibility that there may be a 'teacher effect'. The anonymity of all schools, children and teachers will be preserved for all analyses and there will be no presentation or comparison of the results from individual schools or teachers. Subgroup analyses are planned to assess the effectiveness of the intervention for children with different learner characteristics (EAL, gender etc).

**14. For quantitative studies, please state the primary outcome measure for the study. For qualitative studies, please state the main outcome the study is aiming to produce.**

Primary outcome measure for quantitative evaluation: Performance on Sandwell mathematics test.

Primary outcome measure for qualitative evaluation: Identification of key elements of effective implementation of the intervention.

**15. For quantitative studies, please state any secondary outcome measures for the study. For qualitative studies, please state any other outcomes the study is aiming to produce.**

Secondary outcome measure for quantitative evaluation: Performance on the WRAT-4 mathematics computation subtest' performance at Key Stage 1 (teacher assessments) and KS2 (teacher assessments)

**16. If the size of the study has been informed by a formal statistical power calculation, please indicate the basis on which this was done, giving sufficient information to allow replication of the calculation.**

Trial 1: See Trial Protocol (attached) page 5-6

*Sample size and power* – In our experience most randomised trials of educational interventions are usually not large enough to identify small but policy important differences. The sample size in the trial will give us good statistical power to identify small but important differences in outcomes, including being able to do various sub-group analyses. In our sample size calculations below we describe the power of 95%, which means that for any given hypothesized difference we will have approximately a 9.5 in 10 chance of showing this. We think, however, that this is conservative and that our actual power will exceed this. We also describe our outcome differences in effect sizes, which essentially means that we will be looking for a difference in mean test scores between the groups divided by the group standard deviation. The effect sizes powered by the sample will enable us to detect an effect size of at least 0.25 for the trial. In addition, we intend to undertake a number of subgroup analyses. Therefore we need to ensure that all trials will be sufficiently powered to support this.

Note that, even small effects may be worthwhile, however. For example, a relatively small effect size of 0.10 means that for a test that has a pass score of 50% then 4% more children will pass this threshold. Although this seems a small proportion translated to a national annual school population this will translate into around 20,000 more children passing a maths threshold. Another way of looking at this impact is that for a class of 25 children this would mean the intervention results in one more child passing a maths threshold. An effect size of 0.20 implies roughly that 8% more children will pass a given threshold or 40,000 children nationally, whilst an effect size of 0.32 is about 14% more children.

**17. If you have consulted a statistician, please provide their name, post and contact details.**

Professor Martin Bland, consultant statistician on evaluation (co-applicant)

Dr Catherine Hewitt, evaluation statistician (funded for 20 days per year for two years)

**18. Please describe any ethical problems likely to arise with the proposed study, and explain what steps you will take to address them.**

Consent is the only likely problem to arise and risk is estimated to be low. The Trial 1 schools receive extra funding and the expectation is that they will participate in the trial because of the extra funding – there are minimal changes to the normal implementation of the intervention as a result of the evaluation (see Trial 1 Protocol). The process evaluation schools can decline to take part, participation is voluntary and with full informed consent of all parties involved.

**19. Please explain how research participants will be (a) identified (b) approached and (c) recruited.**

Impact evaluation: Trial 1

Identification: Schools from LAs which receive extra funding - voluntary

Approached: Invited to Trial 1 conference at Westminster DCSF hosted by Jim Knight Schools Minister

Recruited: At conference February 2009

Process evaluation

Identification: The LAs have been identified by the ECC steering group in a way which avoids those schools which are taking part in the RCTs.

Approached: Three schools from each of the LAs have been chosen at random as our first choice. If any choose not to opt in others from that LA will be invited to participate. Approached by letter.

Recruited: During January and February 2009

**20. Please give details of inclusion and exclusion criteria.**

Please see above

**21. If research participants are to receive any payments for taking part in the research, please give details, indicating how much they will receive and the basis on which this was decided.**

Schools *may* receive a book token to recognise the small amount of additional testing for the wider outcomes depending on resources available. Amount has still to be determined but is likely to be less than £50

**22. If research participants are to receive reimbursement of expenses, or any other incentives or benefits for taking part in your research, please give details, indicating what and how much they will receive and the basis on which this was decided.**

N/A

**23. Please indicate whether any research participants will be from the following groups; if so, please explain the justification for their inclusion.**

|  |          |
|--|----------|
| NHS staff  | No       |
| Children under 18  | Yes      |
| Those with learning disability                                     | Possibly |
| Those who are unconscious, severely ill or have a terminal illness | No       |

|  |    |
|--|----|
| Those in emergency situations  | No |
| Those with mental illness (particularly if detained under Mental Health Legislation)   | No |
| Those suffering from dementia  | No |
| Prisoners  | No |
| Young offenders  | No |
| Adults who are unable to consent for themselves  | No |
| Those who could be considered to have a particularly dependent relationship with the investigator, e.g. those in care homes, medical or other students | No |
| Other vulnerable groups (please specify)   | No |

**24. During your study, will anyone discuss sensitive, embarrassing or upsetting topics, or issues likely to disclose information requiring further action (such as the implementation of a screening test for drug abuse)? If so, please give details of the procedures in place to deal with these issues.**

N/A No-one will discuss anything other than the ECC intervention and this is not deemed to be sensitive, embarrassing or upsetting (see Process Evaluation Protocol)

**25. If the research involves deception of any kind, please explain and justify the deception.**

N/A

**26. Please list and justify potential adverse effects, risks or hazards for participants.**

N/A

**27. Please explain and justify any discomfort, distress, pain or inconvenience that the study might cause participants, including details of any procedures in place to deal with these issues.**

N/A During the pupil interviews in the Process Evaluation the pupils can discontinue at any time. The teacher will be present throughout all interviews.

**28. Please describe the potential benefits to participants.**

The schools will benefit from being part of a national evaluation which will enable the researchers to estimate the effects of a national rollout programme.

**29. If the research requires that any intervention or procedure that is normally considered part of their routine care is to be withheld from participants, please provide details and a justification.**

Trial 1

N/A No child who would normally be eligible to receive the intervention will have it withheld – Trial 1 uses a wait list design for this reason. All eligible children (as determined by the teachers at the schools) will receive the intervention – they will be randomised to receive it in the first, second or third term.

Process evaluation

N/A

**30. Will participants, as a result of the research, receive any intervention or procedures that would not be considered part of their routine care? If so, please give details, including describing in detail the intervention or procedure in question.**

N/A The intervention is going to be rolled out nationally to all eligible children.

**31. Please list and justify potential adverse effects, risks or hazards, pain, discomfort, distress or inconvenience that the study might cause researchers.**

N/A

**32. Please explain how voluntary informed consent to participate will be elicited from participants. If different groups are involved in the study (e.g. parents, children, staff), please describe the sequence of consent.**

Trial 1 – LAs and schools are expected to participate as they receive extra funding. Voluntary informed consent from parents for participation in both the intervention and the evaluation takes part once a child has been identified and is managed by the school who has a discussion with the parents. If parents consent to their child receiving the intervention the child cannot refuse the evaluation but will have the evaluation explained to them by the teacher. For detailed procedures and all forms (Information Sheets and Consent Forms) see Trial 1 Protocol Appendices (attached)

Process – LAs, schools, Headteachers and teachers volunteer to participate – it is voluntary and informed written consent is required. For detailed procedures and all forms (Information Sheets and Consent Forms) see Process Evaluation Protocol Appendices (attached) . Parents receive an Information sheet and give assent by opt-out option. Children receive Information Sheet and discussion and can opt out at any time.

**33. If you do not envisage obtaining a signed record of consent from participants, please justify.**

N/A



**34. If you do not envisage providing participants with a written information sheet about your study, please justify.**

N/A

**35. Please explain what arrangements have been made to explain the research to participants who do not understand English well.**

The Trial Co-ordinator will liaise with the teachers in all schools to ensure that the schools' existing resources for dealing with explaining the intervention to parents or pupils who do not understand English well can be used to explain the evaluation to them.

**36. If the research will involve any of the following activities please indicate so and provide further details.**

|  |  |
|--|--|
| Examination of medical, educational or social care records by those outside the NHS or relevant service, or within the NHS or relevant service by those who would not normally have access | No   |
| Transfer of data by floppy disc  | No   |
| Electronic transfer of data by CD, tape, or equivalent   | No   |
| Transfer of data by ftp or via web sites   | No   |
| Sharing of data with other organisations   | Between York and Durham only – we have detailed data protection procedures – see attached document |
| Export of data outside the European Union  | No   |
| Use of personal addresses, postcodes, faxes, emails or telephone numbers   | See attached data protection document  |
| Publication of direct quotations from respondents  | Process evaluation: Yes, permission will be sought and no actual names will be used                |
| Publication of data that might allow identification of individuals   | No   |
| Use of audio/visual recording devices  | Process evaluation: Yes, permission will be sought in advance.                                     |

**37. If the research will involve storing personal data, including sensitive data, on any one of the following please indicate so and provide further details.**

|                                       |  |
|---------------------------------------|--|
| Manual files                          | Yes, two locked barriers – see attached data protection document |
| NHS or other public service computers | No   |

|                                  |  |
|----------------------------------|--|
| University computers             | Yes, password protected folder in shared file with access by team only – see attached data protection document |
| Private company computers        | No   |
| Home or other personal computers | Yes, with permission of PI only and password protected – see attached data protection document                 |
| Laptop computers                 | Yes, as above – see attached data protection document  |
| Websites                         | No   |

**38. Please explain the measures in place to ensure data confidentiality, including details of encryption or other methods of anonymisation.**

See attached data protection document

**39. Please detail all who will have access to the data generated by the study.**

Carole Torgerson, Hannah Ainsworth, Andy Wiggins, Patrick Barmby, David Torgerson, Martin Bland, Charles Hulme, Vivien Hendry, Catherine Hewitt

**40. Please detail who will have control of, and act as custodian(s) for, data generated by the study.**

At York Carole Torgerson and Hannah Ainsworth  
At Durham Andy Wiggins and Patrick Barmby

**41. Please explain where, and by whom, data will be analysed.**

Analysis of Trial 1 will be by Carole Torgerson, Catherine Hewitt, David Torgerson and Martin Bland  
Analysis of Process Evaluation will be by Andy Wiggins and Patrick Barmby

**42. Please give details of data storage arrangements, including where data will be stored, how long for, and in what form.**

Please see data protection document

**43. If data protection officers are aware of your study, please give details.**

Data protection officers at DCSF have approved our data protection document

**44. Please indicate whether your results will be reported and disseminated in any of the following ways, giving any relevant details.**

|  |  |
|--|--|
| Peer reviewed scientific journals  | Yes                                      |
| Internal report  | Yes                                      |
| Conference presentation  | Yes                                      |
| Other publication  | No                                       |
| Submission for academic assessment   | No                                       |
| Submission to regulatory authorities   | No                                       |
| Access to raw data and right to publish freely by all investigators in study | No – agreed publication plan in Protocol |
| By an Independent Steering Committee on behalf of investigators              | No                                       |
| Other (e.g., Cochrane Review, University Library)                            | No                                       |

**45. If results are not to be reported and disseminated in any of the above ways please explain how they will be reported and disseminated.**

Technical report and summary to funder

**46. Please explain how results will be made available to participants and the communities from which they are drawn.**

Conference to disseminate results.  
Letter to schools, pupils and parents containing summary of results.

47. If the Principal Investigator or any other key investigators or collaborators have any direct personal involvement in the organisation sponsoring or funding the research that may give rise to a possible conflict of interest, please supply details.

N/A

48. If individual researchers are to receive any personal payment over and above their normal salary for taking part in this research, please supply details.

N/A

49. Please explain any arrangements that have been made to provide indemnity and/or compensation in the event of a claim by, or on behalf of, participants for negligent harm.

University of York employer indemnity  
Durham University employer indemnity

50. Please explain any arrangements that have been made to provide indemnity and/or compensation in the event of a claim by, or on behalf of, participants for non-negligent harm.

University of York employer indemnity  
Durham University employer indemnity

**51. Finally, please list any potential risks to the researcher(s) employed on the project, including details of procedures to deal with any such risks.**

None envisaged

**For other applications, please complete:**

Signature of Principal Investigator:

*Carole Torgerson*

Signature of Head of Department:

Date of Completion:

070108

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## **Appendix 3: Data Protection Procedures**

The level of security necessary for this evaluation is '**RESTRICTED**'. This is because it is an evaluation of a sensitive policy intervention, and involves individual case details in the Secondary Analyses and Trials 1 and 2. Compromise of data collected and analysed in the evaluation could disadvantage the government in policy development, or could cause distress to individuals.

Below we provide a detailed general statement on our data security policy during data collection and analysis and arrangements for the safe and secure transfer of data. In addition we provide detailed specific arrangements for the three phases of the evaluation, including details of in-house security at both Durham and York. These measures will ensure that we comply with the Data Protection Act 1998.

### **Detailed general statement**

The University of York and Durham University shall observe their obligations under the Data Protection Act 1998 and shall comply at all times with the Act.

All hard and electronic data will be marked 'Restricted'. We will store all hard data at York and Durham protected by at least two barriers within a secure building (locked filing cabinet or container within locked office in secure building). When we dispose of the hard data we will either shred within the office or dispose through the waste disposal bags marked 'confidential disposal'. All electronic data will be stored on restricted access/password protected files. Access will be restricted to members of the evaluation team (4 core members plus statistician and economist). When we dispose of electronic data we will delete all copies including data stored on USBs. If we need to transfer the data internally at either institution we will do so by e-mail or in double sealed envelopes; if we need to transfer data between the two institutions we will do so either by e-mail or by special delivery or secure courier. Discussions about the restricted data will always take place face-to-face and not on the telephone. Data will not be faxed. If any of the core team members or statistician or economist works from home or when travelling this will only be permitted with one of the lead applicants' permission, and compliance with all measures above will be required. Photocopying will be permitted, but this will be restricted to essential copies only and circulation will be restricted.

### **Detailed specific arrangements**

#### **Secondary Analyses**

This will involve:

Data on individual pupils obtained from the National Pupil Database. The data may include some or all of the following: amended or final versions of PLASC/census data; KS1 results, KS2 results, FS results.

Collection and analysis of these data will comply with fair processing principles. Data will be received at the University of York by the PI and will be restricted to members of the core team and statistician and economist working on the project. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.).

#### **Trials 1 and 2**

This will involve:

Recruitment of schools, randomisation of pupils, data collection (Sandwell Test results A and B pre-, post, and follow-up tests, KS2 data), data analysis for Trials 1 and 2 (overall mean effect sizes with confidence intervals; sub-group analyses) and economic evaluation.

A copy of the York Trials Unit Standard Operating Procedures is included as an Appendix. All recruitment, randomisation, data collection and data analysis procedures during the trial phase of the evaluation as outlined in this document will be followed. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.).

In addition, informed, positive consent will be obtained from all participants using an opt-in clause in the consent document relating to participation in the intervention. An information sheet will also be given to all participant children, teachers and headteachers which will outline the purpose(s) for which we are gathering or processing their data, who will hold it, if it will be disclosed to anyone, how long it will be retained etc and what will happen to it.

### **Process evaluation: Fieldwork notes (and contact details)**

This will involve:

- Lesson / Classroom observations
- Teacher training observations / interviews
- Teacher and other school staff interviews
- Local Authority Officer interviews
- Training Provider Interviews
- Every Child Counts management interviews

**No identifiable data will be collected for any children.** Identifiable data in the form of names and contact details (address and telephone number) will be used throughout the project for adults who agree to contribute to the research (note: informed written consent will be sought and obtained from all participant adults.) Identifiable data will be in written and computer form. All details will be destroyed 6 months after completion of the project. Those details (written or computer) will be kept personally and exchanged between the two Durham researchers.

Field notes made during the course of the research will identify the name of the school and where appropriate relevant staff. **Children's names (or indefinable data) will not be collected.** Notes will be made in handwritten or computer form, and electronic recordings of interviews will only be made if specific agreement is given by all of the people involved.

Electronic data (including any sound recordings) will be stored on access protected personal computers and only authorised Durham or York staff will have access (4 core team members AW, PB, CT and HA). Backups will be made on secure servers at Durham and York. Written notes will be stored when not in use in locked filing cabinets. Generally these will be copied to computer files, after which the notes will be destroyed. Any hand written notes not

transferred will be destroyed six months after the end of the project. Electronic data will be retained on the secure servers at Durham and York indefinitely.

Carole Torgerson and Andy Wiggins

261108

## **Appendix 4: Trial 1 Analysis Plan**

### **Every Child Counts Evaluation**

#### **Trial 1 Analysis Plan**

(Note: Operational Group approval received 21/01/10)

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation.

Note: A number of children were randomised to Spring or Summer terms only. The outcomes for these children will be analysed separately, and will not be included in the main analysis.

#### **Primary analysis**

The primary outcome is the GL assessment 6. This is the most robust analysis because the outcome measure will be undertaken and marked blind to group allocation by independent testers, and because the sample size is sufficient to show an effect size difference of 0.25 between the two groups. We will use  $p = 0.05$  to indicate statistical significance for the primary analysis. The difference between the test mean of the intervention group and the test mean of control group will be compared. We will undertake a regression analysis with GL assessment 6 as the dependent variable. Explanatory variables for the interim analysis will be: group allocation; Sandwell A test result (pre-test); school; age of child; gender. Explanatory variables for the final analysis will be: group allocation; Sandwell A test result (pre-test); school; age of child; gender; FSM status; SEN status. If there is a high level of correlation between baseline and SEN status one of these variables will be removed from the regression. The analysis will compare the performance of children who are randomised to NC in the Autumn term with the control children who are to receive NC later (Spring or Summer terms). The GL assessment 6 will be administered to all children at the start of the spring term (January 2010). Tests will be marked by independent markers who are blind to the treatment allocation. We will produce 95% confidence intervals of the difference between the groups and a  $p$  value of 0.05 will indicate statistical significance.

#### **Economic Evaluation**

An economic evaluation will also be undertaken for Trial 1.

#### **Secondary analyses**

For the secondary outcome we will look at the impact of NC on Sandwell B test (December, 4 intervention children and 8 control children) and Sandwell A test (April, 4 intervention children and 4 control children) controlling for the same co-variables outlined above (i.e., Group; Sandwell A test; school; age; gender). We will also compare the first cohort to the second cohort on the April assessment using the secondary outcome measure. By comparing the first to the second cohort at that time we will check to see whether, in fact, there is a one-time bump in scores immediately after intensive tutoring. We will repeat this analysis after the July testing using the secondary outcome measure, this time comparing outcomes for all three cohorts.

#### **Exploratory analyses**

In addition, for the main outcome we will look for interactions between baseline test score, age and gender (i.e., do children respond any differently to NC based upon their pre-test scores, age or gender?) and number of Numbers Count lessons attended; we will also explore interactions between main outcome and status of Numbers Count teacher (i.e.



Deputy Head, Assistant Head, NC teacher, and highest educational achievement of NC teacher), FSM status and SEN status.

To reduce the problems of multiple testing we will use  $p = 0.01$  to indicate statistical significance for all secondary and exploratory analyses. Note: the secondary outcomes are susceptible to bias because the tests will be undertaken by persons not blind to group allocation.

We will also compare the results for the primary outcome with the results for the secondary outcome in order to investigate potential bias due to the secondary analysis not having been undertaken blind.

*Wider impact (quantitative assessment)*

We will measure the following variables in January in order to assess the wider impact of the intervention:

- (d) Attention/behaviour/mental health (SDQ Goodman teacher/parent scale);
- (e) Attitudes to mathematics, literacy and school (PIPS);

For the wider impact assessments we will compare the mean score for the intervention group with the mean score for the control group.

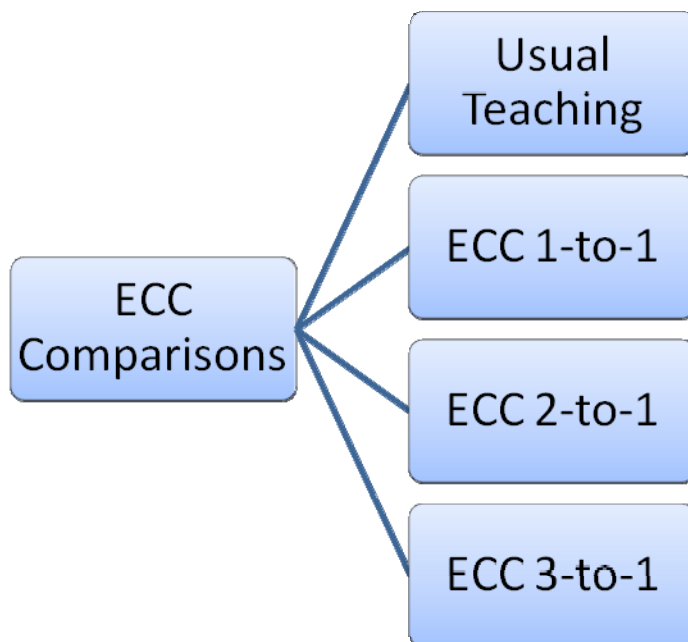
## Appendix 5: Economic Evaluation Protocol

### Protocol for Economic Evaluation of Every Child Counts

In addition to understanding the effectiveness of an intervention, it is very important to include a trial-based economic evaluation to investigate the cost effectiveness of the ECC intervention. In particular, this evaluation will inform decision-makers of whether group or individual Every Child Counts (ECC) is the most cost-effective policy when compared with usual teaching. The trials are described elsewhere but essentially comprise 3 comparisons of different levels of intensity of ECC, as well as usual teaching. The trials will assess the effectiveness of:

- (1) usual teaching in mathematics
- (2) usual teaching in mathematics plus ECC delivered to single children
- (3) usual teaching in mathematics plus ECC delivered in pairs
- (4) usual teaching in mathematics plus ECC delivered in triplets

Trial-based evaluations are being conducted for each of these, to assess the relative effectiveness of different modes of delivery of the intervention. These are illustrated in the figure below.



**Figure 1: Decision Tree**

The aim of the evaluation will be to identify, of the 4 potential comparators, which is the cost-effective option. That is, the economic evaluations based on these trials will address the following question: *What is the cost effectiveness and incremental cost effectiveness of the three types of delivery for Every Child Counts compared to usual teaching?* The time of the evaluation mirrors that of the randomised trial in that we have not attempted to extrapolate beyond the timeline of the actual trial. Consequently our cost effectiveness results only apply to a single term only. Because of the lack of a long term comparator group we cannot estimate whether or not the intervention's effectiveness is sustained.

There are 4 comparisons in the economic evaluation:

- (1) What is the cost effectiveness of ECC compared with usual teaching?
- (2) What is the cost-effectiveness of ECC delivered in pairs compared with ECC delivered to single children?
- (3) What is the cost-effectiveness of ECC delivered in triplets compared with ECC delivered to single children?
- (4) What is the cost-effectiveness of ECC delivered in triplets compared with ECC delivered in pairs?

We will collect data on the costs of the three ECC programmes, as well as the quantities of resources used, to enable us to calculate the costs of each arm of the trial. Outcomes from each arm of the trial will also be collected. We will compare these costs with the outcomes from the programmes to assess the incremental cost per additional child who gets a score higher than the mean score of the control group. In other words, how much does it cost to move one child who scores below average – that is, the average of the control group – to above average?

### *Methods*

Intermediate outcome: Primary outcome measure from the randomised controlled trial of ECC, which is achievement on PIM6 in January 2010 (and April 2010 for Trial 2) as measured by the independent testing. This will be measured for all four comparisons in the evaluation. Converting the raw effect size into the proportion of additional children who pass the mean score of the control group will convert the outcome into a value that is more relevant for policy-makers. For example, an effect size of 0.30 indicates that 12% more children would pass the control mean score.

We will also assess the extrapolated cost per child achieving level 2 or above at Key Stage 1, estimated from achievement on PIM6.

| <b>PIM6 Raw Score</b> | <b>National Curriculum Mathematics Level</b> |
|-----------------------|--|
| 0-9                   | W  |
| 10-13                 | 1c   |
| 14-17                 | 1b   |
| 18-20                 | 1a   |
| 21-23                 | 2c   |
| 24-26                 | 2b   |
| 27-28                 | 2a   |

**Table 1: Estimates of National Curriculum level associated with PIM6 raw scores, from p.41 Progress in Maths 6 Teacher's Guide**

GL Assessments, who developed PIM6, have published predicted levels for National Curriculum Mathematics associated with raw scores (Table 1). These scores show the estimated *current* level that a child would be working at under the National Curriculum given their PIM6 score. The assumption is that children in this evaluation would do at least as well as this when they are tested at Key Stage 1 during the summer term of the same academic year, setting a lower bound for the analysis.

Perspective: Resource use in the education sector, which includes the DCSF, local authorities, and schools. Resources used outside this sector are excluded, which includes

those used by students, their families, other sectors and any productivity changes, as well as capital costs (Drummond et al., 2005).

All costs will be adjusted to 2009 prices and presented in an undiscounted form. In terms of the sunk costs of developing ECC for single children, these costs are considered to be sunk costs, and equivalent in each arm since schools and teachers must have invested in this training regardless of which form of ECC was delivered by a school for the evaluation.

There are several potential results from the economic evaluation. Ranking the interventions according to their relative effectiveness will allow the dominant and extended dominant alternatives to be identified. If one of the numeracy interventions is better and costs less then it is said to dominate the alternative intervention, while extended dominance occurs if there is some combination of strategies that dominate all possible values of a third strategy. For example, if group teaching produces better maths scores and at a lower cost than individual tuition then it is said to be the dominant intervention. However, in past experience a situation that is quite common is for the more expensive intervention to be better than the less expensive alternative. In this case we need to calculate the cost per additional child getting past the mean of the control group and this information will be presented to policy makers for them to decide whether this marginal cost is worth the extra benefit. This is the Incremental Cost Effectiveness Ratio (ICER), which is the difference in costs and impact of two programmes (Drummond et al., 2005), calculated by:

$$\text{ICER} = \frac{\text{Cost of Programme 2} - \text{Cost of Programme 1}}{\text{Effect of Programme 2} - \text{Effect of Programme 1}}$$

### *Synthesis*

We will calculate an incremental cost per additional child passing the mean control score. We have chosen to convert any additional gain score into this standardised measure so that the results are more generalisable and not specific to the individual test used in this evaluation. Thus we will present the results as a cost effectiveness ratio with a cost effectiveness acceptability curve (CEAC) to show the level of uncertainty surrounding our estimates. CEACs are a useful way to summarising information about uncertainty, using the observed data to show the likelihood that an intervention is cost-effective compared with the alternative(s), based on what a decision-maker might be willing to pay per unit change in an outcome (Drummond et al., 2005, Fenwick and Byford, 2005). That is, in a CEAC we plot the willingness to pay per additional child getting above the mean score of the control group along the x axis against the probability of achieving a given value.

CEACs are used as an alternative to estimating confidence intervals around ICERs, which are statistically difficult to calculate (Fenwick and Byford, 2005, Fenwick et al., 2004). They derive from the joint distribution of incremental costs and incremental outcomes, usually resampled from the original data through non-parametric bootstrapping (Drummond et al., 2005, Fenwick and Byford, 2005, Fenwick et al., 2004). It is interpreted as “*the probability that the ICER falls below the maximum acceptable ratio*” (Fenwick and Byford, 2005, p.107) of monetary values for decision-makers, thus illustrating the uncertainty of the estimate of the ICER.

Cost per child and effect per child will be presented for each option (usual teaching, ECC1, ECC2, and ECC3) and ranked in ascending order of costs (from least expensive to most expensive). Dominated and extended dominated options will be excluded and appropriate ICERs will then be calculated.

### *Sensitivity analysis*

We will test our findings by using a sensitivity analysis. We will assess the cost-effectiveness of the intervention by changing key assumptions such as varying pay scales and time taken to train teachers in the intervention.

For example, KPMG have produced a report which assesses the long term costs of numeracy difficulties (Hudson et al., 2009). This report estimates that total direct costs to schools and local authorities are £2499.39 per child (average costs over 5 years, excluding sunk costs from programme development) for 1-to-1 numeracy training. Assuming that the estimate from the KPMG report is robust and valid, this value could be used as an estimate of the Cost of Programme 1, and used as a basis for estimating the additional costs of training teachers to deliver the programme to pairs or triplets of children (Programme 2). One implication of using this KPMG value is that the same assumptions must be applied to the rest of the model. It implies that the perspective of this evaluation will also be the joint perspective of schools and local authorities, excluding costs and effects of the programme that are not directly associated with these providers. Primarily, this excludes all costs already incurred as part of developing the programme, as well as direct costs attributable to any other sources, indirect costs, and intangible costs.

### *References*

- DRUMMOND, M. F., SCULPHER, M. J., TORRANCE, G. W., O'BRIEN, B. & STODDART, G. L. (2005) *Methods for the Economic Evaluation of Health Care Programmes*. Oxford, Oxford University Press.
- FENWICK, E. & BYFORD, S. (2005) A guide to cost-effectiveness acceptability curves. *The British Journal of Psychiatry*. 187: 106-108.
- FENWICK, E., O'BRIEN, B. J. & BRIGGS, A. (2004) Cost-effectiveness acceptability curves - facts, fallacies and frequently asked questions. *Health Economics*. 13: 405-415.
- HUDSON, C., PRICE, D., GROSS, J. & KPMG INFRASTRUCTURE GOVERNMENT AND HEALTHCARE (IGH) ADVISORY (2009) The long term costs of numeracy difficulties. London, Every Child a Chance Trust.  
[http://www.everychildachancetrust.org/pubs/ECC\\_long\\_term\\_costs\\_numeracy\\_difficulties\\_final.pdf](http://www.everychildachancetrust.org/pubs/ECC_long_term_costs_numeracy_difficulties_final.pdf)

## Appendix 6: Randomisation Protocol

### ECC Trials 1 and 2 Randomisation Protocol for dealing with school requests regarding randomisation

(1) School requests that an individual child or individual children will not be randomised to the Autumn term (for a variety of reasons, e.g. child(ren) too young, child(ren) have limited spoken English etc)

- **Try to persuade school to keep the children in random allocation to any term.** For English as an Additional Language (EAL) children, make the point that the Numbers Count developers have stated that NC IS appropriate for these children in the Autumn term. For young children make the point that there is no evidence that NC is inappropriate for young children.
- **If the school insists that the children CANNOT have NC in Autumn term (for example if they are already receiving Reading Recovery) state that we will work with this situation, and ask the school to inform us on Data Form A the name and unique pupil number of this child and why they cannot be randomised to a specific term.**

(2) School has identified fewer children than minimum specified:

Trial 1 – schools should identify 12, so if the school has only identified 11:

- **Make the point that the usual number of children to identify for Numbers Count is 12, and first ask the school to try to identify the usual number, i.e. to follow normal practice.**
- **If the school is unable to do this, say that we will randomise the 11 (or 10 etc) children they have identified and there will be a gap in a random term – this time of this gap can't be chosen.**

Trial 2 – schools should identify **12-14 for Pairs** and **16-18 for Triplets** (and **20-22 for Barclays schools**)

- Ask the schools to identify a minimum of 12 (as this is normal practice) and if possible the minimum for whichever trial they are in.
- State that whatever number the schools are able to identify we will randomise, e.g. 15 for Triplets or 19 for Barclays.

## Appendix 7: Beginning of Trial Information Letter to Schools

06.07.09

Dear Headteacher and Numbers Count Teacher

Thank you very much for agreeing to take part in the Independent Evaluation of Every Child Counts: Trial 1. We are looking forward to working with you over the coming year and hope that taking part in the evaluation will also be a valuable experience for you and your school.

Included in this pack there are a number of important documents which we will explain about in more detail below.

However to begin with there have been two changes to the trial which we hope will make things easier for your school. You may remember that we suggested at the conference that we would like to independently test all year 2 children at the beginning of the Spring term. However it has now been decided that **only the 12 children selected for Numbers Count who are taking part in the trial will need to be independently tested at this time point.** We will arrange with you for an independent tester to visit your school during the week commencing 04 January 2010. This independent tester will be specially trained and have experience of working with children, they will also be CRB checked. The independent tester will test all 12 children selected for Numbers Count using the NFER Nelson progress in Maths 6 or 7 test. They will also conduct one other test with the children that will assess the children's attitudes towards maths and school etc. We will also ask the class teacher for each of the 12 children selected for Numbers Count to complete a short questionnaire about each child which seeks to measure the children's well being, behaviour etc.

The second change has been made following advice from a number of schools taking part in the evaluation and concerns the timing of the Sandwell tests. **We would like you to administer the Sandwell Test to all 12 children at the end of the Autumn term and at the end of the Spring term rather than at the beginning of the Spring term and the beginning of the Summer term.** We hope this fits in better for you, as you would usually exit Sandwell test the children taking part in Numbers Count at the end of the term rather than at the beginning of the following term. (The independent testing will still be conducted at the beginning of the Spring term – January)

**We have included an updated Flow of Actions Sheet which we hope makes these two changes clear.**

Please find enclosed in the green folder in this pack, 12 copies of the parent information sheets which parents can keep and 12 parental consent forms which need to be signed by parents and returned to Hannah using the large freepost envelope provided. Also enclosed in the green folder are 3 copies of the children's information sheet which should be read to each child by the NC teacher (or teacher conducting the Sandwell A test) before each child is tested using the Sandwell A test in September.

We have also included two data forms. **Data Form A should be completed and returned in the large freepost envelope with the parental consent forms. Data Form B should be completed and returned in the small freepost envelope.** The reason for having the two forms is for confidentiality, so the Sandwell test scores are only printed next to Unique Pupil Numbers and not full names. We have also emailed you Data Form A and B, if you would prefer to return them by email that is fine. (If you would prefer to send Data Form A and B by recorded delivery, please do so and we can reimburse you.)

**We are very happy for you to begin selecting the 12 children now and holding meetings with parents to gain their consent. The Sandwell A testing, however, needs to be conducted at the beginning of the Autumn term.** Please return the data forms and signed parental consent forms as soon as possible in September using the freepost envelopes provided. Once we receive your selection information we will randomly allocate the children to term of delivery and let you know immediately so you can begin teaching children allocated to Autumn term delivery.

**Please do get in touch with us (contact details below) if you have any further questions or need clarification about anything.**

Yours sincerely

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)  
[cjt3@york.ac.uk](mailto:cjt3@york.ac.uk)  
01904 328152



**Appendix 8: Data Collection Form A**

**Trial 1  
Data Collection Form A**

Please complete in block capitals

School Name.....

Numbers Count Teacher.....

| Full name of child selected for NC | Unique Pupil Number of child selected for NC |
|------------------------------------|--|
|                                    |  |
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**Appendix 9: Data Collection Form B**

**Trial 1  
Data Collection Form B**

Please complete in block capitals

School Name.....

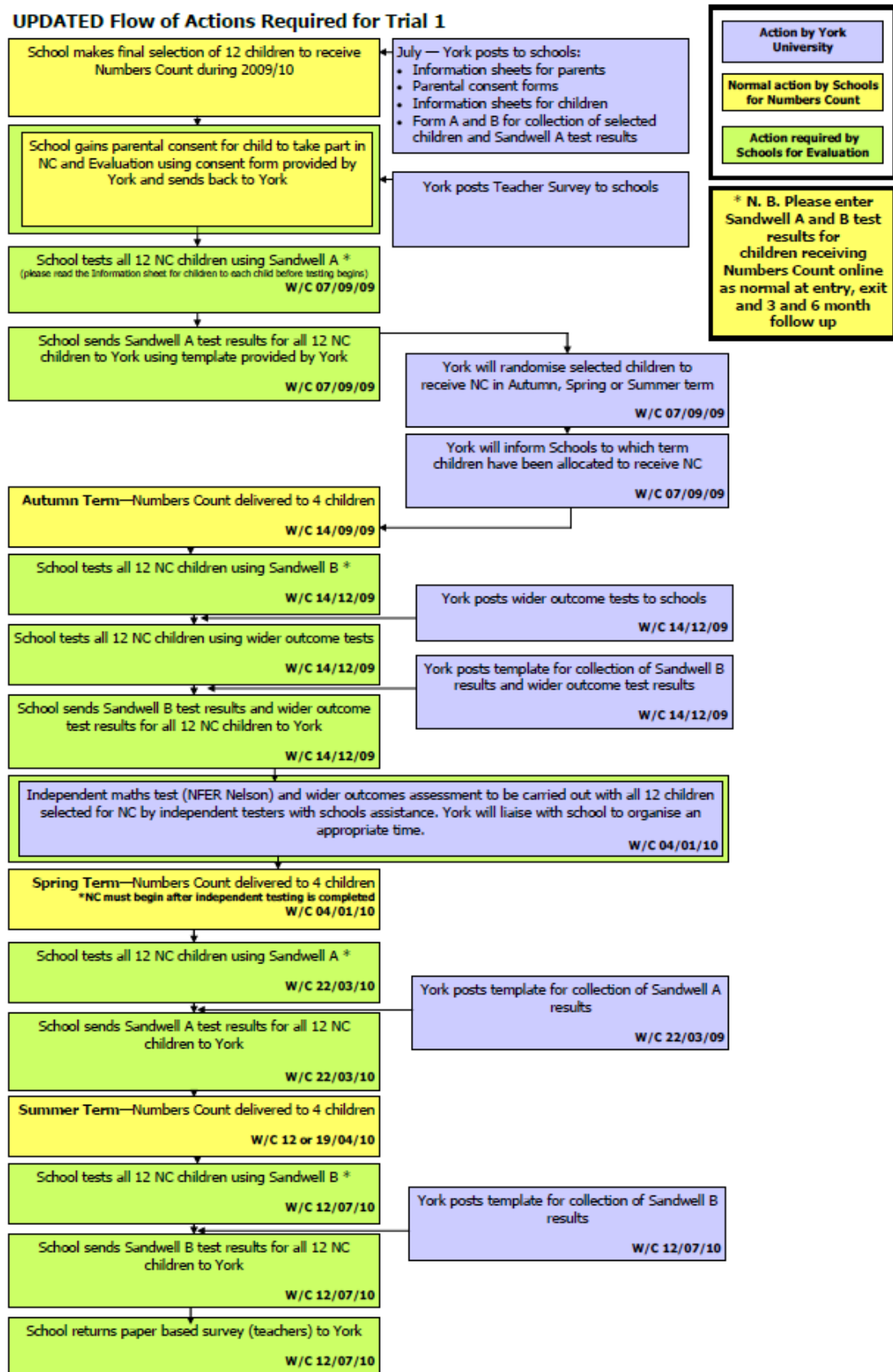
Numbers Count Teacher.....

| Unique Pupil Number of child selected for NC | Sandwell Test A Score (September) | Record other information about the child here* |
|--|-----------------------------------|--|
|  |                                   |  |
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|  |                                   |  |

\*will normally be left blank but can be used for other information about the child following a discussion with Hannah e.g. if a child is also receiving Reading Recovery, or they have already had NC in year 1.

## Appendix 10: Updated Flow of Actions

### UPDATED Flow of Actions Required for Trial 1



**Action by York University**

**Normal action by Schools for Numbers Count**

**Action required by Schools for Evaluation**

\* N. B. Please enter Sandwell A and B test results for children receiving Numbers Count online as normal at entry, exit and 3 and 6 month follow up

## **Appendix 11: Numbers Count Teachers' Survey Cover Letter**

21.08.09

Dear Numbers Count teacher

I hope you have had a nice summer break,

Please find enclosed with this letter 'Trial 1 Survey: Part A'. Please could you complete this survey and return in the FREEPOST envelope provided.

I have also enclosed a sample pupil log and an information sheet detailing how pupil logs should be completed. Individual pupil logs for each child in the trial will be sent to you during the Autumn term.

If you have any questions about completing the surveys, as always, please do contact me.

Yours sincerely,

Hannah

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

# Appendix 12: Numbers Count Teacher Survey Part A

## Every Child Counts Evaluation

### Trial 1 Survey: Part A

To be completed at the beginning of Trial 1 (Autumn Term Sep 2009)

Thank you very much for taking part in Trial 1. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you are the Numbers Count teacher at more than one school you only need to complete Part A of the survey once, but could you please put the names of both the schools that you teach at. If you have any questions about this survey please contact the ECC Trial 1 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

PLEASE COMPLETE IN BLOCK CAPITALS

Name of School.....

Name of Second School (if applicable).....

Your name.....

Your post/role in school (e.g. Numbers Count teacher and Assistant Head etc):.....

Gender:

- Male
- Female

Number of years teaching experience before this year:

Highest educational qualification (please tick one box):

- PGCE
- Masters level
- Bachelors Level
- Teaching Diploma/Teaching Certificate
- Other. Please give details.....

Any other qualifications (please tick as many boxes as apply):

- Any qualifications related to teaching children with special educational needs
- Any qualifications related to teaching mathematics
- Any other relevant qualifications. Please give details.....

*Thank you for completing this survey. Please return in the FREEPOST envelope provided to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD.*

## **Appendix 13: Funding Letter to Teacher Leaders**

07.10.09

Dear Teacher Leader

You may remember that additional funding was agreed for schools taking part in Trial 1 of the Independent Evaluation of Every Child Counts. The letter provided below has been sent to all schools taking part in Trial 1 informing them of how they can claim this additional funding.

I am aware however, that on your schools behalf, you may have purchased the copy of the revised Sandwell tests (SENTR) which some of the additional funding is to cover. If you purchased the revised Sandwell test (SENTR) for schools taking part in the evaluation in your area, then you are able to raise an invoice to the Department of Children Schools and Families (DCSF) in order to claim back this money.

Please could you list each school (only schools taking part in Trial 1) you purchased a copy of the revised Sandwell test (SENTR) for and provide proof of purchase. Invoices should be addressed to:

**DCSF Administrator  
Raising Standards in Maths, Science and ICT Team  
DCSF  
Sanctuary Buildings  
Great Smith Street  
London SW1P 3BT**

I hope this information is clear, as always please do get in touch with me in you need clarification about anything,

Yours sincerely,

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

## Appendix 14: Funding Letter to Schools

07.10.09

Dear Numbers Count teacher

Thank you very much your hard work and patience at the beginning of term, I hope everything is going smoothly now you have received your random allocations.

You may remember that I wrote to you at the end of the Summer term to inform you that additional funding had been agreed for schools taking part in Trial 1. I am writing to you now to let you know the arrangements for claiming this additional funding from the Department for Children Schools and Families (DCSF).

Each school taking part in Trial 1 can claim funding to cover the purchase of one copy of the revised Sandwell test (SENTR) at a cost of £90. You should raise an invoice to the Department for Children Schools and Families (DCSF) to claim for this amount (please provide proof of purchase). If your teacher leader bought the revised Sandwell test (SENTR) on your schools behalf, you do not need to do anything; your teacher leader will be able to claim funding from the DCSF to cover the cost of the test.

Each school taking part in Trial 1 can also claim funding to cover Teaching Assistant time used to help conduct the additional Sandwell tests that are required for the evaluation. Each school can claim up to a maximum of 6 hours of Teaching Assistant time at £8 per hour, at each testing point during the year (Sep, Dec, Mar, July). So in total 24 hours of Teaching assistant time at £8 per hour over the school year (a total of £192).

Each school can only raise invoices for work carried out and not in advance of work to be undertaken, and should bear in mind that two Financial Years are covered over the school year and so a school is not be able to send one invoice to cover all four tests.

I would therefore suggest that you either:

- raise 4 invoices over the school year, one at the end of each testing point (so for example you would now be able to claim up to a maximum of £48 to cover 6 hours of teaching assistant time at £8 per hour for the September testing)
- or raise 2 invoices over the school year, one to cover the September, December and March testing points (claiming a maximum of £144) and one to cover the July testing point (claiming a maximum of £48).

All invoices should be raised to the Department for Children Schools and Families (DCSF) and should be addressed to:

**DCSF Administrator**  
**Raising Standards in Maths, Science and ICT Team**  
**DCSF**  
**Sanctuary Buildings**  
**Great Smith Street**  
**London SW1P 3BT**

I hope this information is clear, as always please do get in touch with me in you need clarification about anything,

Yours sincerely,

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158



## **Appendix 15: Letter to Schools who could no longer take part in the trial**

15.07.09

Dear Headteacher and Numbers Count teacher

### **Every Child Counts: Trial 1**

Unfortunately I need to inform you that your School will no longer be able to take part in Trial 1 of the independent evaluation of Every Child Counts. I have been in communication with your teacher leader XXX and she has informed me that circumstances in your school have changed and consequently you will have a new Numbers Count teaching in training from September 2009. To take part in Trial 1 Numbers Count Teachers must be trained and accredited. Taking part in the trial would affect the new Numbers Count teacher's training and we do not want to disrupt the training in any way. I hope you understand this situation and can we say thank you very much for been willing to take part in the trial.

We would be very happy to send you a summary of the results from Trial 1 if you are interested.

Yours sincerely

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)  
[cjt3@york.ac.uk](mailto:cjt3@york.ac.uk)  
01904 328152

## Appendix 16: Autumn term Information Pack

27.11.09

Dear Head Teacher and Numbers Count teacher

### ECC Evaluation – Autumn Term Information Pack

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts. This letter contains information about a number of requirements for the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### Sandwell Testing

As you are aware all children taking part in the trial need to be tested using Sandwell B from the revised SENTER package. Testing can begin as soon as the children receiving Numbers Count this term have had 12 weeks of teaching (or before if this is too near the end of term). As in September, for the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DCSF for teaching assistant time as detailed in a previous letter. **All testing should be completed before the Christmas Holidays.** Please complete and return Data Form C (included in this pack) by email, fax or Freepost, before the Christmas Holidays. Thank You.

#### Strengths and Difficulties Questionnaire (Wider outcomes test)

We would like to ask each school to help us collect wider impact information on each of the children taking part in the trial. This is an additional task; however we would be very grateful if a Strengths and Difficulties Questionnaire could be completed for each child in the trial by the Numbers Count teacher in collaboration with the Year 2 teacher who teaches the child in question. This should be done when children allocated to Autumn term have been exited from Numbers Count. We would also be very grateful if you could also ask parents/carers of all children taking part in the trial to complete a Strengths and Difficulties Questionnaire. We are happy for you to do this with parents when they come into school or in any way that is convenient for you and the parents. If you are able to send on all the completed questionnaires to us in the Freepost envelope provided or by fax before Christmas that would be very helpful. A copy of the Strengths and Difficulties Questionnaire is included in this pack; please make as many photocopies as you need.

#### Pupil Logs

As detailed previously, over the course of the year we would like you to complete a pupil log for every child taking part in the evaluation. A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

Please return the completed Pupil logs in the Freepost envelope provided or by fax or send electronic copies by email. A list of all the children's names and their trial IDs are included in this pack for your reference.

## **Independent Testing**

As detailed in previous written information, and as discussed at the conference, all the children taking part in the trial will be tested by independent testers, all of whom will be experienced teachers and in most cases registered inspectors in current practice (all will have CRB checks). We are now able to provide you with further information about the independent testing and we would also like to take this opportunity to ask for your help in conducting the independent testing.

Hannah will be in touch within the next week or so to propose a suitable time for an independent tester to visit your school during the first week back after the Christmas break (week commencing 4<sup>th</sup> January 2010). Each child taking part in the trial will be assessed using the GL Assessment (NFER) Progress in Maths 6 and the PIPS attitudinal assessments. PIPS (Performance Indicators in Primary schools) from the Centre for Evaluation and Monitoring at Durham University, is designed to measure wider outcomes of the Numbers Count intervention, such as confidence and enjoyment of maths and other subjects.

The testing will be done in small groups of four children at a time, repeated to cover all children in the trial, during a morning or afternoon session. We would very much appreciate it if you would be able to provide an appropriate room in which this can be done, and also if someone from your school would help with the organisation. This would include taking children to the room and being with them as a familiar adult during the assessment. This could be a TA, or perhaps a governor with a particular interest, or indeed anyone who knows the school and you are happy with. We will be paying schools £50 directly for your help with this.

**We are aware there is a lot of information here, as always please contact the trial co-ordinator (Hannah) should you require any more information or clarification.**

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

## Appendix 17: Data Collection Form C

### ECC Trial 1 Data Collection Form C

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

If a child has left the trial and you have already let me know, please do not worry if their Trial ID still appears here. Please let me know their gender but just write 'left' under Sandwell B Score.

| Child's Trial ID | Sandwell B Test Score (December) | Child's Gender (M/F) |
|------------------|----------------------------------|----------------------|
| INSERT           |                                  |                      |
| INSERT           |                                  |                      |
|                  |                                  |                      |
|                  |                                  |                      |
|                  |                                  |                      |
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|                  |                                  |                      |

# Appendix 18: Trial 1 Pupil Log

Please refer to Information Sheet for completing pupil logs

## ECC Evaluation Trial 1: Pupil Log

School name: .....

Child's Trial ID:.....

Term in which child received NC (please tick one box):

- Autumn
- Spring
- Summer

Total number of NC lessons received

Please indicate your perception of the level of engagement with Numbers Count shown by the **child** using the following scale (please tick one box):

- Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Please indicate your perception of the level of engagement in Numbers Count shown by the **parent/carer** using the following scale (please tick one box):

- Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Were all the child's NC lessons 30 minutes in length?

- Yes
- No      If no, please give details (e.g. how many were longer/shorter and why).....

Did the child exit Numbers Count at 12 weeks?

- Yes
- No      If no, why not?.....

Please detail what has happened to the child at the end of Numbers Count (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other      If other, please give details.....

Please provide any other information about the child which you think could be relevant:

.....  
.....

## Appendix 19: Trial 1 Information for Completing Pupil Logs

### Every Child Counts Evaluation: Trial 1

#### Information for completing Pupil Logs

During the course of the year we would like the Numbers Count teacher to complete a log for each child who was originally selected to take part in the trial (even if they leave part-way through). Please do not complete a log for children who are *not* in the trial (for example a log should not be completed for any children who were not selected originally for random assignment by the University of York).

At the end of each term please complete a pupil log for all children who have received Numbers Count during the term. Please photocopy as many copies of the pupil log form as you need.

**We have provided further details below on completing the pupil logs; please keep this information for future reference and refer to it when completing the pupil logs at the end of each term.**

Please complete all the pupil logs in clear BLOCK CAPITAL letters.

**School name** – Please enter the School name.

**Child's Trial ID** – Please enter the Child's Trial ID number.

**Term in which child received Numbers Count (NC)** – Please tick one box:

- Autumn
- Spring
- Summer

**Total number of NC lessons received** – Please count the total number of Numbers Count one-to-one lessons which the child **actually** received.

*Count all the days on which the child received 1-1 Numbers Count support or assessment, including:*

- *the Diagnostic Assessment*
- *all 1-1 Numbers Counts teaching sessions*

*Do not count:*

- *the Sandwell Entry Test or Exit Test*
- *any support given before the Sandwell Entry Test or after the Exit Test*
- *the Classroom Observation Survey*
- *any support given in the child's classroom during a class lesson*
- *more than one session in any day*

**Child's engagement** – Please indicate your perception of the level of engagement with Numbers Count on the scale illustrated below. If a child was always engaged we would expect that they would have willingly attended all NC lessons and tried hard in all their lessons. If a child was not engaged we would expect that they showed reluctance about coming to Numbers count lessons and did not try hard in their lessons (please tick one box):

Always engaged

Mostly engaged

Sometimes engaged

Rarely engaged

Not engaged

**Parental engagement** – Please indicate your perception of the level of engagement in Numbers Count on the scale illustrated below. If a parent or carer was always engaged we would expect that they made every effort to come into school to watch a Numbers Count lesson and that they worked with the child on activities you sent home. If a parent/carers was not engaged we would expect that they took no interest in the child’s Numbers Count lessons and did not work with their child on the activities you sent home (please tick one box):

Always engaged

Mostly engaged

Sometimes engaged

Rarely engaged

Not engaged

**Were all the child’s NC lessons 30 minutes in length** – Please indicate yes or no. If no, please give details, e.g. how many were longer/shorter and why.

**Did the child exit at 12 weeks** – Please indicate yes or no. If no, please explain why not.

**Next steps for the child after NC** – Please detail what has happened to the child at the end of Numbers Count (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other

Please give details if you tick ‘other’.

**Any other information about the child** – Please provide any other information about the child which you think could be relevant, for example if the child left the school, in this case please detail at what point the child left and which school they moved to.

**We hope you find these instructions helpful. If you have any further questions about completing the pupil logs please contact the ECC Trial 1 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).**

**Thank you very much for taking the time to complete the pupil logs over the duration of the year.**

**All information provided in the pupil logs will be kept confidential.**

## **Appendix 20: Information Letter for Independent Testers**

17.12.09

Dear Independent Tester

Thank you very much for agreeing to be an independent tester in the Evaluation of Every Child Counts, which is being conducted by the University of York and Durham University.

In this pack you will find everything you need for conducting the independent testing in the week beginning 4<sup>th</sup> January 2010.

Please find a list of all the schools you have been assigned to visit and the dates and times of your visit. For each school I have provided the address and names and contact details. There is also a list of all the children who should be tested at each school and a place for you to mark if any were absent from testing. In each school the children should be tested in two groups. Please divide the list in half and ask the teaching assistant or Numbers Count teacher who is helping you at each school to collect the first set of children. Please conduct the testing as described in the testing protocol with each group of children.

For each school I have provided two sets of labels one for the Progress in Maths 6 answer book and one for the PIPs Quiz. The label with the full name on is purely for your reference and should not be used. The label with the Child's Trial ID and first name should be attached to the test paper. The children do not need to write anything on the front of the papers.

Please also find enclosed in this pack:

A Progress in Maths 6 Guidebook

Enough copies of the Progress in Maths 6 answer book for all the children you will be testing  
A Progress in Maths 6 Group Record Sheet, one for each school you are going to.

Enough copies of the PIPs Quiz for all the children you will be testing.

Testing Protocol

Safe Guarding Procedure

**When you visit each school please remember to take your Criminal Records Bureau (CRB) check with you. Please also take photographic evidence of your identity, for example a current driving licence or passport. The school may ask to see these documents.**

**Arrangements for returning the test data to the University of York**

After you have completed all the testing, you should mark the Progress in Maths 6 answer books and enter the children's scores on the Progress in Maths 6 Group Record Sheet as detailed in the Guidebook. A Group Record Sheet should be completed for each school. The children should only be identified by their Trial ID; please do not put their names on the Group Record Sheet. Please take a photocopy of each school's Group Record Sheet and keep it in a safe place. Please post all the schools original Group Record Sheets to the University of York using the FREEPOST A4 envelope provided in this pack. Once we have received the Group Record Sheets in the post, we will inform you and then please shred the photocopy you kept.



You also need to return all the completed Progress in Maths 6 answer books and the completed PIPs Quizzes (please note you do not need to mark the PIPs Quiz). Please place an elastic band around each school's set of completed test papers and put the register of the children's attendance on the top of the pile. Please make sure you cut off the children's names. It is very important that all the data are anonymous.

Each school's pile of test papers should be placed back into the box in which this information pack arrived. I have provided a new label with the University of York address on; this should be stuck on the top of this box. DHL will then collect the box from you on the day I have arranged with you.

**If you need to contact somebody during the independent testing week, please contact Andy Wiggins who will be overseeing arrangements.**

**Tel: 07909 198635**

**Email: [andy.wiggins@durham.ac.uk](mailto:andy.wiggins@durham.ac.uk)**

I hope this information is clear. Again many thanks for agreeing to be an independent tester.

Yours sincerely

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

## Appendix 21: Independent Testing Protocol

### Protocol for independent testing of pupils as part of the ECC evaluation

Much of the information on the PIM 6 test is in the GL 'At a Glance Guide' which comes with the testing packs.

#### *Preparing for the test*

For the testing, PIPS Year 2 attitude questions and GL Assessment's Progress in Maths (PIM) 6 test will be used. These will be paper-based tests.

If possible, use a room for testing that does not have helpful or distracting wall charts, and where pupils will not be disturbed. Ensure that the pupils are separated from each other so that they cannot copy. The testing will be typically carried out in groups of 6 pupils (although more than 6 is fine) with a familiar Teaching Assistant or Numbers Count Teacher present. Each pupil will need pencil with a rubber and rulers available on request. Calculators should not be used.

Each pupil will need the PIPS questions and the PIM6 booklet, and the tester will need a copy too, along with the 'At a Glance Guide' for PIM6.

The tester will also need the name and Trial ID for each of the children. The University of York has provided Trial ID stickers which should be stuck onto the front of both tests.

It is expected that the testing will take about 40 minutes.

During the testing, it is recommended that the tester remains standing, so that he/she can observe whether the children are on the correct question and to intervene if necessary.

Also recommended is that the tester always has showing to the pupils the page of the attitude questionnaire or test booklet which the pupils should be on, so that the tester can direct their attention if necessary, and say "*we are on this question now*". They can also read the directions for the testing behind the questionnaire/booklet.

#### *Start of the testing*

Begin the session with the following:

*"Hello everybody. My name is ..... and I would like to find out what you think about your lessons at school and we are going to do some maths questions. Let's start with what you think about maths, reading and school. Could you look at this sheet please?"*

Hold up a copy of the attitude questions. Then say:

*"For these questions, you are going to put a tick through the face which you think shows how you feel most of the time. The first one says 'I like eating sweets'. If you like eating sweets most of the time, you would put a tick through the happy face. If you like eating sweets some of the time, you would put a tick through the face in the middle. If you don't like eating sweets, you would put a tick through the sad face. Someone has already put a tick through the middle face for this question."*

Then say:

*"Now let's look at the other questions.. The first one says 'I like counting'. If you like counting most of the time, put a tick through the happy face. If you like counting some of the*

*time, put a tick through the middle face. If you don't like counting, put a tick through the sad face."*

If everyone is clear about what to do, continue reading out the statement about maths, reading and school. Ensure that the pupils are all ticking the correct question. Read the following:

I look forward to sums  
I like reading  
I look forward to reading  
I enjoy school  
I like the lessons

Say:

*"Well done everyone, now can you have a look at the green booklet?"*

*Administering the PIM 6 test*

Hold up the PIM6 test booklet. Then read out the following:

*"I am going to read out some maths questions now. I will read each question once, but if you want me to read a question one more time, put your hand up. We will then move on to the next question. Don't worry if you can't do a question – some questions are difficult, so have a guess if you can, then move quickly on to the next question. If you make a mistake, then just cross it out, and write your answer again. Is everyone ready? Let's look at question 1 with the trees."*

Read the questions from the 'At a Glance Guide'. For each question, simply say the number of the question and then the text. Do not read out the title of the question (e.g. Chop, Sails etc.), but remind the pupils at times that "we are on the question with ...." to keep their attention directed. If necessary, say to the pupils:

*"Can everybody just look here ... We are on this question now."*

All the questions will be read aloud by the tester. Unless children put their hand up, move on to the next question when the children have had sufficient time (an average of 1 minute per question may be sufficient). The emphasis should be on moving through the questions in a fairly brisk manner, rather than leaving children to worry about questions. When appropriate, say:

*"When you have finished the question, turn the next page to the next question."*

This will also help to move the pupils on through the test.

For some questions, the test booklet will be specifically referred to for the pupils (namely questions 6, 7, 20).

Pupils can be provided with some assistance with language – meaning of individual words can be provided, or even the question can be read in pupils' first language. In the latter case, assistance from the TAs will be required.

*At the end of the test*

Please read out:

*“That is the end of the test everyone. Well done to you all for doing so well. If you can leave everything on the table in front of you, then you can go back to class with (the Teaching Assistant’s or the Numbers Count Teacher’s name).”*

Please ensure that all the details on the front cover of the test are in place before putting the test booklets away.

For marking of the booklets, please refer to the PIM6 Teacher’s guide pages 32 to 33. The record Sheet for each school can then be subsequently filled in and returned to the University of York.

## **Appendix 22: Safe Guarding Procedure**

### **National Evaluation of Every Child Counts**

#### **Trial 1 and 2 Safe guarding procedure**

Testers will visit each Trial 1 and Trial 2 school to test each child participating in the trials using two tests: the GL Assessment (NFER) Progress in Maths test and the PIPS test. In Trial 1 the independent testing will be conducted on one occasion (January 2010); in Trial 2 the independent testing will occur on two occasions (January 2010 and April 2010).

As the research team we have obligations to meet both the legal requirements, as detailed in “The Vetting and Barring Scheme Guidance, October 2009”, and to satisfy ourselves that the testers are both competent and suitable people to carry out the testing.

Each school will provide a suitable area for the testing to be carried out, and a teaching assistant, or other suitable adult, to support the testing. This person will have a CRB check with the host school. On the day of the testing they will collect and return the children from their class, and will be with children whilst the testing is being carried out.

The testers will not have any unsupervised contact with any children whilst at the school, and will not see any of the children more than twice. They will have received training in conducting the testing. They will have a CRB check, although not necessarily with York or Durham University, and this will be available to be inspected by the schools prior to them entering any school to carry out the testing.

This procedure was agreed by the Trial Team on: 12.11.09

This procedure was agreed by the University of York Humanities and Social Sciences Ethics Committee on: 16.12.2009

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See: [http://www.isa-gov.org.uk/PDF/VBS\\_Guidance.pdf](http://www.isa-gov.org.uk/PDF/VBS_Guidance.pdf)

## Appendix 23: PIPs Quiz

|               |                           |  |   |   |
|---------------|---------------------------|--|---|---|
| EXAMPLE       | I like eating sweets      |    |    |    |
| About Maths   |                           |  |   |   |
| 1             | I like counting           |    |    |    |
| 2             | I look forward to sums    |    |    |    |
| About Reading |                           |  |   |   |
| 3             | I like reading            |  |  |  |
| 4             | I look forward to reading |  |  |  |
| About School  |                           |  |   |   |
| 5             | I enjoy school            |  |  |  |
| 6             | I like the lessons        |  |  |  |

## Appendix 24: Independent Testing Letter to Schools

08.12.09

Dear [Head Teacher] and [Numbers Count teacher]

### ECC Evaluation – Independent Testing

As detailed in the previous letter, all the children taking part in the trial need to be tested by an independent tester during the first week back after the Christmas break (week commencing 4<sup>th</sup> January 2010).

The independent tester will be visiting your School on:

**[Day and Time]**

Each child taking part in the trial will be assessed using the GL Assessment (NFER) Progress in Maths and the PIPS attitudinal assessments. The testing will be done in small groups of four children at a time, repeated to cover all children in the trial.

Please could we ask you to provide an appropriate room in which the testing can be conducted. If someone from your school would also help with the logistics of collecting children and staying with them during the testing that would be very much appreciated.

If the day and time suggested above is not convenient for your School, please can you let us know as soon as possible and by Friday 11<sup>th</sup> December at the latest and we will try to organise another time for you. Please be aware that there is very little flexibility and we would have to find another school that would be happy to swap with you in order to make any changes.

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth  
ECC Trial Co-ordinator

University of York  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

**Appendix 25: Independent Testing Confirmation Letter to Schools**

**ECC EVALUATION – INDEPENDENT TESTING CONFIRMATION**

**[INDEPENDENT TESTERS NAME] will be visiting [SCHOOL NAME] on [DAY] at [TIME] to conduct the independent testing required for the Every Child Counts Trial.**

The independent tester will test all children in the trial in two groups (rather than in groups of 4 as previously stated) using the GL Progress in Maths 6 Test and the PIPs Quiz. Please ensure an adequately sized room is provided. It is very important that the independent tester does not know which children have been receiving Numbers Count this term so please refrain from talking to them about this.

If you need to contact somebody about the independent testing during the week beginning 4<sup>th</sup> January 2010 please contact Andy Wiggins who will be overseeing the arrangements

Tel: 07909 198635

Email: [andy.wiggins@durham.ac.uk](mailto:andy.wiggins@durham.ac.uk)

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth

ECC Trial Co-ordinator

University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158



## Appendix 26: Cover Letter Data Collection Form D

[School Name]

22 January 2010

Dear [Numbers Count teacher name]

### **ECC Evaluation: Data Collection Form D**

Thank you very much for all your help with the independent testing at the beginning of this term, especially with the snowy weather conditions!

In order to conduct the analysis we need to know the date of birth of all the children in the trial and also whether they receive free school meals or not. I have enclosed a data form with this letter/email which I would be very grateful if you could complete and return as soon as possible.

Please return the Data Form by email or fax or in the FREEPOST envelope provided as soon as possible. It is urgent that we receive this information in order that we can conduct the trial analysis. We would be extremely grateful if you could send this before Friday 29<sup>th</sup> January 2010.

Many thanks

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator

University of York  
York  
YO10 5DD

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

**Appendix 27: Data Collection Form D**

**ECC Trial  
Data Collection Form D**

School Name INSERT

Numbers Count Teacher INSERT

If possible please provide information for all children, even if they are no longer involved in the trial.

| <b>Child's Trial ID</b> | <b>Date of Birth</b> | <b>Free School Meal (yes/no)</b> |
|-------------------------|----------------------|----------------------------------|
| INSERT                  |                      |                                  |
|                         |                      |                                  |
|                         |                      |                                  |
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|                         |                      |                                  |
|                         |                      |                                  |

## Appendix 28: Spring Term Information Pack

09.03.10

Dear Head Teacher and Numbers Count teacher

### ECC Evaluation – Spring Term Information Pack

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts.

This letter contains information about a number of requirements for the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### Sandwell Testing

As you are aware **ALL** children taking part in the trial need to be tested using Sandwell A from the revised SENTER package at the end of this term, regardless of whether they received Numbers Count this term or not. As in September and December, for the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DCSF for teaching assistant time as detailed in a previous letter. Testing can be completed in the last week of term. **However, all testing should be completed before the Easter Holidays.**

**Please complete and return Data Form E (included in this pack) before the Easter Holidays by email, fax or Freepost. Thank You.**

#### Pupil Logs

As detailed previously, over the course of the year we would like you to complete a pupil log for every child taking part in the evaluation. A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

Please return the completed Pupil logs in the Freepost envelope provided or by fax or send electronic copies by email **before the Easter holidays**. A list of all the children's names and their trial IDs are included in this pack for your reference.

**We are aware there is a lot of information here, as always please contact the trial co-ordinator (Hannah) should you require any more information or clarification.**

Just to update you, Carole Torgerson (ECC evaluation joint Chief Investigator) will be leaving the University of York on 31st March and moving to the University of Birmingham, where she will retain an interest in the evaluation as a methodologist. Professor David Torgerson will take over as joint Chief Investigator (with Dr Andy Wiggins) from April 1st. Hannah Ainsworth will remain as Trial Co-ordinator.

Many thanks

ECC Evaluation Team

Carole Torgerson (University of York until 31st March) (joint Chief Investigator)

Andy Wiggins (Durham University) (joint Chief Investigator)  
David Torgerson (University of York, York Trials Unit) (new joint Chief Investigator)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

## Appendix 29: Data Collection Form E

### ECC Trial [INSERT TRIAL] Data Collection Form E

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

Please test all children originally involved in the Trial if they remain at your school, using the Sandwell A test. Please return all results before the Easter holidays.

| Child's Trial ID | Sandwell A Test Score (March/April) |
|------------------|-------------------------------------|
| INSERT           |                                     |
| INSERT           |                                     |
|                  |                                     |
|                  |                                     |
|                  |                                     |
|                  |                                     |
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|                  |                                     |

## Appendix 30: Summer Term Information Pack

23.06.10

Dear Head Teacher and Numbers Count teacher

### ECC Evaluation – Summer Term Information Pack

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts. We are now almost at the end of the trial and this letter contains information about the last requirements of the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### Sandwell Testing

As you are aware **ALL** children originally selected to take part in the trial need to be tested using **Sandwell B** from the revised SENTR package at the end of this term, regardless of whether they received Numbers Count or not. For the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DfE for teaching assistant time as detailed in a previous letter. Testing should be completed as near to the end of term as is possible. **All testing should be completed before Monday 19<sup>th</sup> July 2010.**

**Please complete and return Data Form F (included in this pack) by Monday 19<sup>th</sup> July 2010 to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided.** Thank You (Please note new Fax and Address details below).

#### Attendance Rate

We would be grateful if you could provide the attendance rate for **ALL** children originally selected to take part in the trial for the Academic Year 2009/1010. For children who have left the school; if possible please provide their attendance rate up to the point they left your school and state the date they left. Please provide this information as a percentage in the column provided on **Data Form F**.

#### KS1 Results

Please could you provide the KS1 results in Maths, English (reading and writing) and Science for **ALL** children originally selected to take part in the Trial as a final level (e.g. 2c). Please provide this information on **Data Form F**.

#### Pupil Logs

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

Please return the completed Pupil logs to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided by **Monday 19<sup>th</sup> July 2010**. A list of all the children's names and their trial IDs are included in this pack for your reference.

## **Trial 1 Survey: Part B**

Please would all Numbers Count teachers complete the Trial 1 Survey: Part B included in this pack. Please return to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided by **Monday 19<sup>th</sup> July 2010**.

We would like to take this opportunity to thank you very much for your involvement in this important independent evaluation of Every Child Counts. The trial has been very successful thanks to the hard work of all the schools taking part. We will provide you with a summary of the trial results as soon as these have been cleared by the Department for Education.

**As always please contact the trial coordinator (Hannah) should you require any more information or clarification.**

Many thanks

ECC Evaluation Team

David Torgerson (University of York) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
Carole Torgerson (University of Birmingham)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

**Hannah Ainsworth  
ECC Trial Coordinator**

**University of York  
Heslington  
York  
YO10 5DD**

**Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158  
Fax: 01904 321387**

# Appendix 31: Numbers Count Teachers Survey Part B

## Every Child Counts Evaluation

### Trial 1 Survey: Part B

To be completed at the end of Trial 1 (Summer Term July 2010)

Thank you very much for taking part in Trial 1. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you are the Numbers Count teacher at more than one school you only need to complete Part B of the survey once, but could you please put the names of both the schools that you teach at. If you have any questions about this survey please contact the ECC Trial 1 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

PLEASE COMPLETE IN BLOCK CAPITALS

Name of School.....

Name of Second School (if applicable).....

Your name.....

Were all children taught in the term to which they were randomly allocated?

Yes

No If no, which children were not taught in the allocated term and why? .....

.....

What were the benefits for your school in taking part in this trial?.....

.....

What were the challenges for your school in taking part in this trial?.....

.....

Do you have any other comments about taking part in the trial?.....

.....

Would you take part in another trial?

Yes

No

Is there any advice can you offer us and the DfE about conducting future trials?.....

.....

Would the Headteacher of your school be happy for us to add your school's name and contact details to a register that we are compiling, of schools potentially interested in taking part in further trials?

Yes

No

*Thank you for completing this survey. Please return by email, fax or in the stamped addressed envelope provided to Hannah Ainsworth (Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) Fax: 01904 321387)*



## Appendix 32: Data Collection Form F

### ECC Trial [INSERT TRIAL] Data Collection Form F

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

- Please test **ALL** children originally involved in the Trial if they remain at your school, using the **Sandwell B test**.
- Please provide the attendance rate for each child for the academic year 2009/2010, given as a percentage. For children who have left the school; if possible please provide their attendance rate up to the point they left your school and state the date they left.
- Please provide each child's KS 1 results in Maths, English (reading and writing) and Science as a final level (e.g. 2c)
- **Please return all results before 19<sup>th</sup> July 2010.**

Thank you

| Child's Trial ID | Sandwell B Raw Test Score (July 2010) | Attendance Rate 2009/2010 (%) | KS 1 Results |         |         |         |
|------------------|---------------------------------------|-------------------------------|--------------|---------|---------|---------|
|                  |                                       |                               | Maths        | Reading | Writing | Science |
| INSERT           |                                       |                               |              |         |         |         |
| INSERT           |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |

## **Appendix 33: Thank you Letter to Schools**

23rd July 2010

Dear Head teacher and Numbers Count teacher

### **ECC Evaluation**

We have now come to the end of the ECC Evaluation. Thank you very much for submitting the final data needed for the evaluation this week.

We wanted to take this opportunity to say a big thank you to all the Schools, Head teachers, Numbers Count teachers and children who have been involved in the Independent Evaluation of Every Child Counts. We know there has been additional work for you all and we are very grateful for all the extra effort and hard work you have put in to make this important evaluation possible.

The evaluation has been very successful and will be able to provide important results.

We will be sending all Schools who have taken part in the evaluation a summary of the results, once the final report we submit to the Department for Education has been formally accepted.

We hope you have a lovely Summer break,

Yours sincerely

ECC Evaluation team

David Torgerson (University of York) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
Carole Torgerson (University of Birmingham)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

## Appendix 34: Summary of findings from pupil logs

Table 1: Summary of information collected on the pupil logs

| Summary   | Randomised term of delivery |      |                |      |                |      |
|---|-----------------------------|------|----------------|------|----------------|------|
|   | Autumn (N=175)              |      | Spring (N=173) |      | Summer (N=174) |      |
|   | N                           | %    | N              | %    | N              | %    |
| <b>Intervention received</b>                        |                             |      |                |      |                |      |
| Autumn  | 155                         | 99.4 | 0              | 0.0  | 0              | 0.0  |
| Spring  | 1                           | 0.6  | 154            | 99.4 | 1              | 0.7  |
| Summer  | 0                           | 0.0  | 1              | 0.6  | 136            | 99.3 |
| Total   | 156                         | 100  | 155            | 100  | 137            | 100  |
| <b>Level of engagement by child</b>                 |                             |      |                |      |                |      |
| Not engaged   | 0                           | 0.0  | 1              | 0.6  | 0              | 0.0  |
| Rarely engaged                                      | 0                           | 0.0  | 0              | 0.0  | 1              | 0.7  |
| Sometimes engaged                                   | 20                          | 12.8 | 28             | 17.8 | 7              | 5.1  |
| Mostly engaged                                      | 65                          | 41.7 | 67             | 42.7 | 59             | 43.1 |
| Always engaged                                      | 71                          | 45.5 | 61             | 38.9 | 70             | 51.1 |
| Total   | 156                         | 100  | 157            | 100  | 137            | 100  |
| <b>Level of engagement by parent/carer</b>          |                             |      |                |      |                |      |
| Not engaged   | 17                          | 11.0 | 26             | 16.6 | 20             | 14.9 |
| Rarely engaged                                      | 39                          | 25.2 | 26             | 16.6 | 29             | 21.6 |
| Sometimes engaged                                   | 38                          | 24.5 | 38             | 24.2 | 44             | 32.8 |
| Mostly engaged                                      | 32                          | 20.6 | 38             | 24.2 | 27             | 20.1 |
| Always engaged                                      | 29                          | 18.7 | 29             | 18.5 | 14             | 10.4 |
| Total   | 155                         | 100  | 157            | 100  | 134            | 100  |
| <b>Were all NC lessons 30 mins?</b>                 |                             |      |                |      |                |      |
| Yes   | 130                         | 83.3 | 145            | 92.4 | 114            | 83.2 |
| No  | 26                          | 16.7 | 12             | 7.6  | 23             | 16.8 |
| Total   | 156                         | 100  | 157            | 100  | 137            | 100  |
| <b>Did the child exit NC at 12 weeks?</b>           |                             |      |                |      |                |      |
| Yes   | 125                         | 80.1 | 135            | 86.5 | 120            | 91.6 |
| No  | 31                          | 19.9 | 21             | 13.5 | 11             | 8.4  |
| Total   | 156                         | 100  | 156            | 100  | 131            | 100  |
| <b>What happened to the child at the end of NC?</b> |                             |      |                |      |                |      |
| Returned to normal class teaching                   | 135                         | 87.7 | 125            | 82.8 | 116            | 87.9 |
| Referred for SEN assessment                         | 4                           | 2.6  | 12             | 7.9  | 7              | 5.3  |
| Other   | 15                          | 9.7  | 14             | 9.3  | 9              | 6.8  |
| Total   | 154                         | 100  | 151            | 100  | 132            | 100  |

Table 2: Total number of NC lessons received

| Summary   | Randomised term of delivery |                |                |
|-----------|-----------------------------|----------------|----------------|
|           | Autumn (N=175)              | Spring (N=173) | Summer (N=174) |
| N         | 146                         | 152            | 102            |
| Mean (sd) | 42.7 (6.2)                  | 39.2 (6.9)     | 40.7 (6.6)     |

**Results:**

- Very few children were rarely or not at all engaged with NC. However there was a more diverse spread of parental engagement with NC;
- The majority of lessons were 30 minutes in length, with a slightly higher percentage of lessons in the spring term being 30 minutes in length;
- The percentage of children exiting the NC intervention at the end of the term rose throughout the year;
- The majority of children returned to normal class teaching at the end of each term, with a slightly lower percentage of children returning to normal class teaching in the Spring term;
- Only three children were taught in a different term from the term to which they were originally allocated.

## **Appendix 35: Summary of the teacher surveys**

### **Teacher Survey Part A**

Forty-four schools took part in Trial 1. Thirty-eight Numbers Count (NC) teachers returned the Teacher Survey Part A (NB. 6 NC teachers taught at 2 schools involved in the trial). Thirty-seven of the 38 NC teachers were female. Sixteen of the NC teachers had other roles in the school as well as being the Numbers Count teacher. The additional roles included; Design Technology Subject Leader; Assistant Head Teacher; PPA teacher; ELS support teacher; Inclusion Manager; Numeracy Co-ordinator; TLR cover; Reading Recovery Teacher; Year 2 Support; Performing Arts Manager; KS1 co-ordinator; History and Geography co-ordinator; Intervention Groups teacher; RE Co-ordinator; NQT Induction Tutor; responsible for Citizenship/Music; and Lead Behavioural Professional.

The mean number of years teaching experience of the NC teachers was 18.05 (SD 9.02, min 5, max 36).

When asked their highest qualification 9 teachers reported it to be a PGCE (2 of whom noted they were currently studying for an MA), 4 reported it to be a masters degree, 16 reported it to be a bachelors degree (one of whom noted they were currently studying for an MA), 9 reported it to be a teaching diploma/teaching certificate. Eight teachers reported they had further qualifications relating to teaching children with special educational needs, 10 teachers reported they had further qualifications relating to teaching mathematics and 11 teachers reported they had other relevant qualifications.

### **Teacher Survey Part B**

Thirty-five of the 38 NC teachers returned the Teacher Survey Part B.

Thirty-one teachers reported that all children were taught in their allocated term, however 3 made the following explanations *“One child was not taught at all though due to him already achieving a 2B by the summer”, “One child left so took another child” and “Except that one of my Summer Term children broke his leg half way through so missed a lot of it”.*

Four teachers reported that not all children were taught in their allocated term. One teacher reported that one child left and a second child had made good progress so was replaced with a child with more needs. One teacher reported that two children were not taught because they had made extremely good progress. One teacher reported that one child had been withdrawn because of poor attendance and the final teacher reported that two children were swapped because one of the children had a hospital visit in their allocated term.

The NC teachers were asked what the benefits for their school were of taking part in the trial. Eleven teachers noted that the testing throughout the year had been beneficial in helping them to track the progress of pupils and compare children at different stages of the trial *“Opportunity to observe child throughout the year, before and after the programme”*. Five teachers noted that children had made progress in maths *“The testing of all 12 children every term showed in every case that they made substantial progress during the term they received NC”*. One teacher noted however that this would have been the case *“trial or no trial.”*

Seven NC teachers noted that the benefit of the trial was to the programme as a whole in that it would hopefully provide clearer results demonstrating the programme to be worthwhile to a wider audience. Two teachers noted that the trial was run efficiently with good support. Other benefits noted by the teachers include:

*“It has been really beneficial taking a wider perspective & making all staff aware of the scope of ECC generally”*

*“There was an opportunity to work with children who would not be considered for Numbers Count - (the last, more able group). It was interesting to see how well they did when faced with a one to one programme”*

*“Hopefully to see the best way to use the intervention and to allocate pupils across the year. But we won't know this until we see the outcomes”*

*“None as yet - it will depend on what the evaluation report e.g. best time for children to have intervention”*

*“Though some children missed out on taking part I had the chance to work with other children who would not have normally taken part”*

*“Helped me to be organised! I could give more frequent progress updates to staff. Some data was helpful as evidence for SATS moderation”*

The NC Teachers were asked to report the challenges for their school in taking part in the trial. Eleven schools found the extra paperwork to be a burden and 10 schools found it difficult to do the extra testing required for the evaluation. Sixteen NC teachers also noted that they found the constraints of the trial difficult, for example a number noted that they found it hard choosing all the children at the beginning of the year and felt that children who made progress during the year should have been replaced with children in greater need of the intervention. Some NC teachers also noted they found the random allocation of children to term difficult *“Teaching children in allocated term even when we didn't think it was the best time to be doing it”*. Three NC teachers noted it was difficult getting parental consent from all parents in a short space of time.

Other challenges noted by the teachers include:

*“Allocating jobs to teachers who already had a large workload.”*

*“being able to give the appropriate amount of time in the last term with SATS and Transition”*

*“School is very large - there are many more than 12 children in need of help!!! (We need 2 x NC teachers!)”*

*“Two children left the school before given N.C.”*

*“Attendance because of children attending swimming lessons once a week. Random allocation, often children were not ready at the beginning of the year*

*“Fitting in with the Yr2 children who were also having Reading Recovery until the summer term or on the Reading Recovery programme for 29 weeks, not being able to change the children selected”*

*“Occasionally a child needed to be in two places at once because the NC session clashed with other support programmes”*

*“Not really a 'challenge' but an additional consideration is the extra time needed for data input and completing pupil logs”*

NC teachers were provided with space to make any other comments. The rigidity of the necessary trial design was again noted by eight teachers with teachers feeling that some children who joined the school after the initial selection ‘missed out’. Others again noted that the random allocation was difficult. The additional paperwork was highlighted by four NC teachers.

Two NC teachers noted they felt the independent testing should not have been conducted with a group because of the needs of the cohort. Three NC teachers also noted they would have liked feedback from the independent testing. Two NC teachers also felt that teaching time was cut short due to the extra testing or returning data.

Two NC teachers noted they would like to be informed of the final results.

Three NC teachers noted good communication with the trial coordinator was helpful.

Other comments include:

*“Needs to be more flexible and integrated with ECC data on IDEC so that information is not required twice e.g. attendance and results”*

*“Some added workload, but manageable”*

*“The programme works very well indeed - the money should go into extra teachers/hours. Now you have the evidence can the balance not swing towards practicalities and teachers?”*

Eighteen teachers said they would be happy to take part in another trial. Nineteen head teachers were happy for the Schools contact details to be added to a register of schools potentially interested in taking part in further trials.



# Independent Evaluation of Every Child Counts: Final Report

## Trial 2 Appendices

Torgerson, C.J., Wiggins, A., Torgerson, D.J., Ainsworth, H., Barmby, P., Hewitt, C., Jones, K., Hendry, V., Askew, M., Bland, M., Coe, R., Higgins, S., Hodgen, J., Hulme, C., Tymms, P. (2011c) Every Child Counts: The independent evaluation, Appendices, report to DfE, January 2011

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## **Appendix 1: Protocol Trial 2 (Final Version)**

### **Protocol Version 4.0 (27/04/2009)**

(note: Ethics approval received 11/06/'09; Operational Group approval received 07/09/'09; Research Advisory Group approval received 14/09/'09))

## **National Evaluation of Every Child Counts**

### **Trial 2: Pairs and Trial 2: Triplets**

This protocol describes a randomised controlled trial of one-to-one delivery of the Every Child Counts (ECC) intervention 'Numbers Count' versus one-to-two delivery (pairs) or one-to-three delivery (triplets) of an adapted intervention for attainment in mathematics.

The Department for Children, Schools and Families (DCSF) is the sole external funder of this trial. This protocol is derived from the detailed project description of the DCSF funding application entitled "Evaluation of Every Child Counts" [DCSF: EOR/SBU2008].

Trial management is by the Institute for Effective Education (IEE) and the York Trials Unit (YTU), University of York.

### **SUMMARY OF PLANNED INVESTIGATION**

#### **Research objectives**

Our primary aim is to obtain robust evidence of the *relative effectiveness* of the Numbers Count intervention (Numbers Count Handbook 2008-2009, Edge Hill University, 2008) when it is delivered *individually to one child* and an adapted intervention when it is delivered to *groups of pairs or triplets of children* on attainment in mathematics. We plan to undertake a pragmatic randomised controlled trial (RCT) in 40 schools. In 20 schools we will compare one-to-one delivery of the Numbers Count intervention versus one-to-two (pairs) delivery of the adapted intervention; and in a further 20 schools we will compare one-to-one delivery of the Numbers Count intervention versus one-to-three (triplets) delivery of the adapted intervention. In all 40 schools attainment in mathematics will be the outcome. This will be an individually randomised trial. The Year 2 children identified by the 40 schools as being eligible to receive the intervention will be randomised to receive an intervention individually or in groups of two or three (depending on school) during the school year 2009-10. All children eligible to receive an intervention will receive it. The 40 schools will be selected using the following criteria:

- schools not participating in Trial 1 or the process evaluation;
- schools of sufficient size to enable more pupils to be identified for Numbers Count;
- schools in a Local Authority which has sufficient capacity to manage the implementation of a group work approach.

The 40 schools in 4 local authorities will be selected to be take part in either Trial 2: Pairs or Trial 2: Triplets.

The wider impact of the intervention will be assessed by analysing wider quantitative outcomes of the children in the cohort (attitudes to mathematics, literacy and school).

We will also assess the impact of additional training for the Numbers Count teachers for group delivery of the adapted intervention.

### **Study population**

After a period of preparation and upon University of York Humanities and Social Science Ethics Committee approval (**note: ethics approval received 11/06/09**) and Every Child Counts Advisory Group approval, recruitment into the RCT will be during June 2009.

### **20 One-to-pairs schools**

Up to 14 eligible children in each of the recruited schools will be identified by the school. Assuming a recruitment rate of at least 90% and allowing for drop-outs, we propose that approximately 18-20 schools will be recruited and approximately 216-280 children will be randomised. We recognise that this is ambitious. We acknowledge that failure to recruit the 20 schools required in our power analysis will impact on our analyses in that we will only be able to detect *larger* effects than those described in the sample size calculation. We will work first with the Headteachers and Numbers Count Teachers and secondly with the Teacher Leaders to help us recruit any schools that are initially not enthusiastic about participation. We anticipate that further information and clarification about the trial will allay any concerns that the schools have about the rationale for and conduct of the trial.

### **20 One-to-triplets schools**

Up to 18 eligible children in each of the recruited schools will be identified by the school. Assuming a recruitment rate of at least 90% and allowing for drop-outs, we propose that approximately 18-20 schools will be recruited and approximately 288-360 children will be randomised. We recognise that this is ambitious. We acknowledge that failure to recruit the 20 schools required in our power analysis will impact on our analyses in that we will only be able to detect *larger* effects than those described in the sample size calculation. We will work first with the Headteachers and Numbers Count Teachers and secondly with the Teacher Leaders to help us recruit any schools that are initially not enthusiastic about participation. We anticipate that further information and clarification about the trial will allay any concerns that the schools have about the rationale for and conduct of the trial.

**Note: Barclays has agreed to fund an additional 4 slots for 4 children to receive Numbers Count at some schools. In order that this will not introduce a potential source of bias (selection bias) we will ask the schools affected to nominate an additional 4 children and these will be included in the randomisation. However, once children have been randomised as children funded by Barclays they will not be included in the trials. Please see additional trial design diagrams for schools with Barclays funding.**

## **BACKGROUND**

The relative improvement of primary mathematics teaching is widely accepted, with the number of 11 year-olds gaining level 4 and above at Key Stage 2 having risen from 59% percent in 1998 to the current figure of over 77%. However, the picture for low achieving pupils is rather bleak and of widespread concern. Since 1998 the number of children failing to achieve level 3 has remained at about 6% - i.e. whilst the majority of children have improved, the lowest performing children have remained at much the same level.

There are many harmful consequences of low attainment in maths, both in the short term, for example, not being able to access many areas of the curriculum (as well as maths itself) and

the potential negative social consequences; and in the longer term, difficulties at secondary school and into adulthood, as well as limitations in terms of the skills of the UK workforce. Indeed, a slightly higher proportion than the 5% of low attaining pupils at KS1 go on to leave secondary education with no qualification in mathematics.

It is widely agreed that a child who is having significant difficulties at an early stage (i.e. KS1) is likely to under-achieve in mathematics throughout their school life, and beyond. To help address these problems the Primary National Strategy (PNS) introduced the three wave model of intervention, with the lowest performing (wave 3) children receiving personalised and individual remedial teaching.

More recently the Every Child Counts (ECC) initiative has been developed by a partnership consisting of a coalition of business partners and charitable trusts (the Every Child a Chance charity) and the Government (DCSF and the National Strategies). Every Child Counts has as its main aim developing and supporting Wave 3 intervention for the bottom 5% of KS1 children, with a subsidiary aim of impacting on standards more widely by influencing classroom practice and supporting less intensive (Teaching Assistant led) interventions for the bottom 5-10% group.

The intervention Numbers Count provides an intensive one to one intervention for those children identified as low achievers (the bottom 5%). In practice it aims to raise their level of performance so that they achieve level 2 or better and wherever possible level 2B or better by the end of KS1 – in effect putting them on a par with their peers, and then able to continue to progress in maths in the normal mainstream class setting. Numbers Count is one part of Every Child Counts which develops mathematics interventions for Year 2 children within the following three waves:

Wave 1 - Quality first teaching for all children

Wave 2 – Small group additional intervention for children just below national expectations

Wave 3 – Individual or very small group intervention with a trained and supported TA for children who are struggling and Numbers Count additional intervention on an individual and/or very small group basis with a trained specialist teacher.

*Every Child Counts* contributes funding to help schools to employ and train specialist Numbers Count (NC) teachers to deliver daily one-to-one Numbers Count teaching for those children with the most severe difficulties.

Edge Hill University, working in partnership with Lancashire Local Authority, has taken the lead in developing the intensive intervention Numbers Count which is the specific focus of this evaluation.

Numbers Count is a 12 week individualised programme, consisting of daily 30 minute one-to-one sessions for the target children and delivered by the trained Numbers Count teachers. The core elements are a comprehensive diagnostic assessment of the child's strengths and weaknesses, core learning objectives for the lessons and guidance for teachers on lesson structure and key teaching approaches. There is also continuing professional development and quality assurance for NC teachers. Numbers Count is designed to help children to develop their knowledge and understanding of number. Numbers Count teachers aim to give children confidence in number and an understanding of patterns and relationships that they can extend to other aspects of mathematics in their class lessons. They use shape, space and measures and handling data as contexts for the development and application of children's number skills and children continue to study the full breadth of the mathematics curriculum with their class teacher.

Numbers Count is a one-to-one intervention. For the purposes of Trial 2, Edge Hill has given permission for teachers to amend their approach in order to deliver an adapted version of the intervention to pairs or triplets of children, using Numbers Count resources. Teachers will receive some advice and support from DCSF consultants on how this is to be done; however, it will be up to individual teachers to amend their practice in order to meet the needs of pairs or triplets of children.

There is a clear need to obtain reliable evidence to inform policy and practice, and crucially to establish the relative effectiveness of one-to-one delivery of Numbers Count compared with one-to-group delivery of the adapted intervention. This is the main focus of this trial, which arises from the recommendation in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools that research should be conducted to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money.

The trial will also be able to tentatively investigate the impact of additional training for Numbers Count teachers for group delivery of the adapted intervention. A secondary focus is a cost-benefit analysis of the various options (see below). There is also a need to have robust data by Easter 2010 in order to enable a formative input into a policy decision regarding the national roll-out in September 2010.

## **RESEARCH METHODS**

As indicated, we intend to undertake a pragmatic randomised controlled trial evaluating the effectiveness of Numbers Count delivered individually versus group delivery of the adapted intervention for attainment in mathematics of the children in Year 2 performing in the bottom 5% nationally in mathematics.

### *Design*

This will be a focused randomised controlled trial to assess both the relative effectiveness of the Every Child Counts intervention delivered one-to-one and the adapted intervention in pairs or triplets. We will also assess the relative effectiveness of the Numbers Count intervention and the adapted intervention delivered in the Autumn or the Spring term. In this study the children within each school participating in the trial who are eligible to receive the intervention will be randomly allocated a) to participate either individually or in groups, and b) to term of delivery. The participant schools for this trial will be selected from the cohort of schools in which Numbers Count teachers are implementing the intervention for the *second* year in 2009-10 (excluding the schools where a new NC teacher is in training in 2009-10). We will be able to assess the effectiveness of the intervention by using the data from children receiving the intervention individually comparing data from children receiving the intervention in groups.

### *How are the results of the trial to be used/interpreted?*

The trial aims to measure the extent of the mean difference between children exposed to the Numbers Count intervention individually compared with children exposed to the adapted intervention in groups. The trial also aims to measure the extent of the mean difference between children receiving the interventions in the Autumn and the Spring terms.

As detailed below, our Protocol emphasises the standardised training for delivery of the Numbers Count intervention and the standardised manual for implementation of the Numbers Count intervention which are normal practice, but also emphasises and justifies the ways in which implementation of the adapted intervention is necessarily different from standardised practice *for the purposes of the trial*. Currently there is an absence of robust independent evidence to inform policy.

#### *Brief details of the proposed practical arrangements for allocation*

Once schools have identified the children who are eligible to receive an intervention, and consent from the children and their parents to be involved in the trial, specifically to undertake any additional testing that will be necessary for the purposes of the trial (including consent to take the wider outcomes tests) has been checked and verified (note: consent to be in the trial is a section on the consent to receive the intervention form) and the baseline testing has been completed, the schools will contact the Trial Co-ordinator either by telephone or by e-mail to access the randomisation process (which will be undertaken by the York Trials Unit). This will ensure unbiased allocation to trial arm.

#### *Proposed methods for avoidance of bias*

Randomisation will control for selection bias, temporal and regression to the mean effects. In Trial 2, children in the Every Child Counts Trial 2 schools will be identified as being suitable for the programme and then randomly assigned to individual or pair/triplet delivery of an intervention. The children will also be randomly assigned to term of delivery. Because pupils will be *randomly* allocated we know that, except for chance differences, the only factor or variable that will affect outcome is the intervention itself (with enough children in the sample individual differences will cancel each other out). Therefore if the outcomes differ between the children after the interventions we can be reasonably confident that this was due to the interventions themselves, and not some other factor.

In the following section we discuss, further, the issues of bias and describe how they may be minimised or eliminated. A biased evaluation may give an incorrect result, thus potentially misleading policy makers, teachers, researchers, pupils and parents into believing an intervention is more or less effective than actually is the case. There are several threats to any experimental evaluation; below we outline how we propose to deal with these potential threats in relation to our proposed research designs for the impact evaluations.

*Selection bias* – As noted previously this occurs when groups of schools or pupils are not formed by random allocation and consequently the groups differ *before* they are given an intervention in some known or unknown and unmeasured variable(s). Although the schools recruited into this trial have not been randomly selected and so therefore may have common characteristics such as increased enthusiasm and commitment to the programme, schools selected to use any intervention *may* differ in characteristics, such as teacher enthusiasm or pupil achievement that could affect future test results. The best method of eliminating this problem is through random allocation. We propose to use random allocation as our principal evaluative strategy for Trial 2.

*Ascertainment bias* – This occurs if those marking the post-tests are aware of the group allocation of the pupils from which the tests originate. The primary outcome measure (Progress in Maths 6/7, NFER/Nelson) will be undertaken and marked independently. The secondary assessment at post-test will be undertaken by the Numbers Count Teachers. Whilst blinded assessment of outcome will not be possible for the secondary outcome measure, we propose close liaison with Edge Hill University and with the National Trainers and Teacher Leaders in order to raise awareness of the importance of adherence to assessment protocols to ensure as robust assessment of outcome as possible. The secondary outcome measure will be the Sandwell test.

*Resentful demoralisation* – This occurs when the control group is dissatisfied because they are not receiving an intervention. For Trial 2 we propose to address the possibility of resentful demoralisation by ensuring all the children eligible to receive an intervention do so. If a parent refuses consent to be in the Trial because they have a preference for individual teaching and therefore do not want their child to be randomised to individual or pair/triplet teaching, *their child will still receive Numbers Count*. In this unlikely situation we will allocate



the child to an individual slot in the Summer term and reduce the numbers of children randomised to the Summer term by 1.

*Attrition bias* – This occurs when there is non-random loss of participants after random allocation. To avoid this we propose to assiduously follow-up all participants (including, if possible, those who move school) and include their data in our analysis. Assiduous follow-up of all participants does have significant resource implications if large numbers of pupils move schools. However, we will be able to use the results from KS1 assessments available on the National Pupil Database (to which we have access) for any pupils who drop-out and this will limit the amount of resources required to obtain post-test results for any drop-outs.

*Non-compliance* – This can introduce selection bias if only those pupils who comply with the intervention are included in the analysis. To prevent this we propose to include all pupils in the analysis whether or not they comply with an intervention – this is known as intention to treat or teach analysis (ITT). Intention to treat analysis answers the key policy question: If we offer Numbers Count to be delivered individually or an adapted intervention to be delivered in groups to all schools, what is the impact on *national* numeracy skills? If there is significant non-compliance, however, it may not answer the question: If Numbers Count is implemented in a school what will be the effect on an individual child's or school's performance? If there is significant non-compliance we will use an analytical approach known as Casual Average Complier Effect (CACE), which allows us to take into account non-compliance and answer both the policy related question and the individual child effects of Numbers Count.

*Misallocation or subversion bias* – Failure to use independent randomisation can lead to researchers allocating in a non-random fashion, which can introduce selection bias. We propose to use the randomisation service provided by the York Trials Unit to health care and education trials to ensure that allocation is rigorously produced in the trial.

### ***Trial 2: Randomised Evaluation of Every Child Counts, 2009-10, comparing one-to-one delivery versus delivery in groups of twos or threes***

#### **Trial 2: Pairs**

The design of this trial requires 5 children in each school to receive Numbers Count or the adapted intervention in the Autumn term 2009, and 5 children in each school to receive Numbers Count or the adapted intervention in the Spring term 2010, and 2, 3 or 4 children to receive Numbers Count in the Summer term 2010. Therefore 12 or 13 or 14 eligible children in each of the recruited schools will be identified by the school to receive an intervention. Each school will have the flexibility to decide how many children will receive Numbers Count in the Summer term (2, 3 or 4); this will enable the schools to keep 1 or 2 slots open to use for either teaching new children who arrive in the school during the year or for wider impact work within the school. Exceptionally schools may recommend a pupil as being unsuitable for randomisation but this will be discouraged as it will reduce the external validity of the trial. In the Autumn term the Numbers Count teacher will deliver Numbers Count to 1 child individually and the adapted intervention to 4 children in two pairs. In the Spring term the Numbers Count teacher will deliver Numbers Count to 1 child individually and the adapted intervention to 4 children in two pairs. In the Summer term Numbers Count will be delivered to 2, 3 or 4 children individually. The University of York will randomise the children to one-to-one delivery of Numbers Count or an adapted intervention. The teachers will determine the makeup of the pairs, based on professional judgement, from the children randomly allocated to pairs. The University of York will then randomly allocate the pairs to term of delivery.

### Trial 2: Pairs (20 schools)

| Term   | No. of children                 |
|--------|---------------------------------|
| Term 1 | 1 individual and<br>2 x 2 pairs |
| Term 2 | 1 individual and<br>2 x 2 pairs |
| Term 3 | 2,3 or 4<br>individuals         |

*Sample size and power* – In our experience most randomised trials of educational interventions are usually not large enough to identify small but policy important differences. The sample size in the trial will give us good statistical power to identify small but important differences in outcomes.

#### *Analysis* (based on 20 schools recruited and Autumn and Spring children)

In this analysis we will be comparing children who are randomised as individuals but are grouped in clusters (i.e. pairs). This grouping effect may result in clustering of outcomes. Ignoring this clustering for the moment our power calculation assumes the following: 0.70 correlation between pre and post test; in 20 schools, a minimum of 40 children randomised to individual tuition and 160 randomised to pairs (4 pairs per school); For the sample size (i.e., 40 versus 160 children) we will have approximately 80% power to show a difference of 0.38 of an effect size, assuming an intracluster correlation coefficient of 0.4 for the children in the pairs.

#### *Analysis* (based on 15 schools recruited and Autumn and Spring children)

In this analysis we will be comparing children who are randomised as individuals but are grouped in clusters (i.e., pairs). This grouping effect may result in clustering of outcomes. Ignoring this clustering for the moment our power calculation assumes the following: 0.70 correlation between pre and post test; in 15 schools, a minimum of 30 children randomised to individual tuition and 120 randomised to pairs (4 pairs per school); For the sample size (i.e., 30 versus 120 children) we will have approximately 80% power to show a difference of 0.55 of an effect size, assuming an intracluster correlation coefficient of 0.1 for the children in the pairs.

### **Trial 2: Triplets**

The design of this trial requires 7 children in each school to receive Numbers Count or the adapted intervention in the Autumn term 2009, and 7 children in each school to receive Numbers Count or the adapted intervention in the Spring term 2010, and 2, 3 or 4 children to receive Numbers Count in the Summer term 2010. Therefore 16 or 17 or 18 eligible children in each of the recruited schools will be identified by the school to receive an intervention. Each school will have the flexibility to decide how many children will receive Numbers Count in the Summer term (2, 3 or 4) which will enable the schools to keep 1 or 2 slots open to use for either teaching new children who arriving in the school during the year or for wider impact work within the school. Exceptionally schools may recommend a pupil as being unsuitable for randomisation but this will be discouraged as it will reduce the external validity of the trial. In the Autumn term the Numbers Count teacher will deliver Numbers Count to 1 child individually and the adapted intervention to 6 children in two triplets. In the Spring term the Numbers Count teacher will deliver Numbers Count to 1 child individually and the adapted intervention to 6 children in two triplets. In the Summer term Numbers Count will be delivered to 2, 3 or 4 children individually. The teachers will determine the makeup of the

triplets, based on professional judgement, from the children randomly allocated to triplets intervention. The University of York will then randomly allocate the triplets to term of delivery.

Trial 2: triplets (20 schools)

| Term   | No. of children                 |
|--------|---------------------------------|
| Term 1 | 1 individual and 2 x 3 triplets |
| Term 2 | 1 individual and 2 x 3 triplets |
| Term 3 | 2, 3 or 4 individuals           |

*Sample size and power* – In our experience most randomised trials of educational interventions are usually not large enough to identify small but policy important differences. The sample size in the trial will give us good statistical power to identify small but important differences in outcomes.

*Analysis* (based on 20 schools recruited and Autumn and Spring children)

In this analysis we will be comparing children who are randomised as individuals but are grouped in clusters (i.e., the pairs and triplets). This grouping effect may result in clustering of outcomes. Ignoring this clustering for the moment our power calculation assumes the following: 0.70 correlation between pre and post test; in the triplets study in 20 schools, a minimum of 40 children randomised to individual tuition and 240 randomised to triplets (4 triplets per school). For the first sample size (i.e., 40 versus 240 children) we will have approximately 80% power to show a difference of 0.38 of an effect size, assuming an intracluster correlation coefficient of 0.4 for the children in the triplets.

*Analysis* (based on 15 schools recruited and Autumn and Spring children)

In this analysis we will be comparing children who are randomised as individuals but are grouped in clusters (i.e., triplets). This grouping effect may result in clustering of outcomes. Ignoring this clustering for the moment our power calculation assumes the following: 0.70 correlation between pre and post test; in 15 schools, a minimum of 30 children randomised to individual tuition and 180 randomised to triplets (4 triplets per school); For the sample size (i.e., 30 versus 180 children) we will have approximately 80% power to show a difference of 0.55 of an effect size, assuming an intracluster correlation coefficient of 0.4 for the children in the pairs.

There are significant risks of low participation of schools in Trial 2. Therefore greater than 40 schools will be approached in order to recruit the required sample size (see above). Teacher Leaders will encourage the schools to participate, as will the Trial Co-ordinator.

If we assume that both individual tuition and group tuition are effective we would expect relatively modest differences between the two interventions. Note that, even small effects may be worthwhile, however. For example, a relatively small effect size of 0.10 means that for a test that has a pass score of 50% then 4% more children will pass this threshold. Although this seems a small proportion translated to a national annual school population this will translate into around 20,000 more children passing a maths threshold. Another way of looking at this impact is that for a class of 25 children this would mean the intervention results in one more child passing a maths threshold. An effect size of 0.20 implies roughly that 8% more children will pass a given threshold or 40,000 children nationally, whilst an effect size of 0.32 is about 14% more children.

**Economic evaluation** – We believe it is very important to include a trial based economic evaluation. One of the co-applicants has considerable expertise in undertaking such evaluations in health care settings (Torgerson D) and we will use similar techniques for this evaluation. We will collect data on the incremental cost of the three Every Child Counts programmes - one-to-one, group (pairs or triplets) (proportions of the different delivery costs in the three interventions). We will compare these costs with the additional gains from the programmes to assess the cost per extra child who has achieved a given standard in maths. There are several potential outcomes from the economic evaluation. If one of the interventions is more effective and costs less then it is said to dominate the alternative intervention. For example, if group teaching (say, in pairs) produces better maths scores and at a lower cost than individual tuition then we will examine possible pre-specified subgroups. However, in past experience a situation that is quite common is for the more expensive intervention to be better than the less expensive alternative. In this case we need to calculate the cost per extra child and this information will be presented to policy makers for them to decide whether this marginal cost is worth the extra benefit.

**Training** - The Numbers Count teachers will receive additional training in order to deliver group sessions of the adapted intervention. In the Autumn term 2009 they will not have yet received the training, but they will have received training by the Spring term 2010. We will therefore be able to tentatively assess the impact of the Numbers Count teachers receiving additional training by comparing the outcomes from the Autumn term children with the outcomes from the Spring term children, with this group of teachers, although this will be based on a small sample size.

## **OUTCOME MEASURES**

### **Pairs**

The primary outcome measure is the Progress in Maths 6/7 NFER Nelson test. This will be administered to all children and marked independently in January 2010 and in April 2010.

All children selected for Numbers Count or the adapted intervention will receive a pre-test in the form of the Sandwell test (A) at the beginning for the year. They will all be post-tested at the end of the first term (Sandwell B). The children will be tested again at the end of the second term (Sandwell A test) and a final post test at the end of the third term (Sandwell B test). The Sandwell test is the secondary outcome measure.

We will also collect the KS1 mathematics results for all children selected for Numbers Count or the adapted intervention.

### *Wider impact (quantitative assessment)*

In addition to the assessment of impact on numeracy abilities, we propose to measure the following variables in order to assess the wider impact of the intervention.

- (a) Attention/behaviour/mental health (SDQ Goodman teacher/parent scale);
- (b) Attitudes to mathematics, literacy and school (PIPS);
- (c) Attendance (PLASC).

All wider impact assessments will be piloted before use (not in ECC schools), and administered independently (except for (a) SDQ Goodman which needs to be conducted by a teacher who knows the child).

| <b>Pupils</b>   | <b>First Evaluation test<br/>September 2009</b> | <b>Second Evaluation tests<br/>January 2010</b> | <b>Third Evaluation test<br/>April 2010</b> | <b>Fourth Evaluation test<br/>July 2010</b> |
|---|---|---|---|---|
| 5 Children receiving NC or the adapted intervention in Autumn Term 2009 | Sandwell A (Entry)                              | Sandwell B (Exit)                               | Sandwell A (3 month)                        | Sandwell B (6 month)                        |
|   |   | INDEPENDENT TEST Progress in maths 6/7          |   |   |
|   |   | Wider outcomes assessments (PIPS, SDQ)          |   |   |
| 5 Children receiving NC or the adapted intervention in Spring Term 2010 | Sandwell A                                      | Sandwell B (Entry)                              | Sandwell A (Exit)                           | Sandwell B (3 month)                        |
|   |   | INDEPENDENT TEST Progress in Maths 6/7          |   |   |
|   |   | Wider outcomes assessment (PIPS, SDQ)           |   |   |
| 2,3 or 4 Children receiving NC in Summer Term 2010                      | Sandwell A                                      | Sandwell B                                      | Sandwell A (Entry)                          | Sandwell B (Exit)                           |
|   |   | INDEPENDENT TEST Progress in Maths 6/7          |   |   |
|   |   | Wider Outcomes assessment (PIPS, SDQ)           |   |   |
| <b>Normal Practice and required by Evaluation</b>                       |   |   |   |   |
| <b>Additional testing/assessment required by Evaluation</b>             |   |   |   |   |

### Triplets

The primary outcome measure is the Progress in Maths 6/7 NFER Nelson test. This will be administered and marked independently in January 2010 and in April 2010.

All children selected for Numbers Count or the adapted intervention will receive a pre-test in the form of the Sandwell test (A) at the beginning for the year. They will all be post-tested at the end of the first term (Sandwell B). The children will be tested again at the end of the second term (Sandwell A test) and a final post test at the end of the third term (Sandwell B test). The Sandwell test is the secondary outcome measure.

We will also collect the KS1 mathematics results for all children selected for Numbers Count or the adapted intervention.

### *Wider impact (quantitative assessment)*

In addition to the assessment of impact on numeracy abilities, we propose to measure the following variables in order to assess the wider impact of the intervention

- (a) Attention/behaviour/mental health (SDQ Goodman teacher/parent scale);
- (b) Attitudes to mathematics, literacy and school (PIPS);
- (c) Attendance (PLASC).

All wider impact assessments will be piloted before use (not in ECC schools), and administered independently (except for (a) SDQ Goodman which needs to be conducted by a teacher who knows the child).

| <b>Pupils</b>   | <b>First Evaluation test<br/>September 2009</b> | <b>Second Evaluation tests<br/>January 2010</b> | <b>Third Evaluation test<br/>April 2010</b> | <b>Fourth Evaluation test<br/>July 2010</b> |
|---|---|---|---|---|
| 7 Children receiving NC or the adapted intervention in Autumn Term 2009 | Sandwell A (Entry)                              | Sandwell B (Exit)                               | Sandwell A (3 month)                        | Sandwell B (6 month)                        |
|   |   | INDEPENDENT TEST Progress in maths 6/7          |   |   |
|   |   | Wider outcomes assessments (PIPS, SDQ)          |   |   |
| 7 Children receiving NC or the adapted intervention in Spring Term 2010 | Sandwell A                                      | Sandwell B (Entry)                              | Sandwell A (Exit)                           | Sandwell B (3 month)                        |
|   |   | INDEPENDENT TEST Progress in Maths 6/7          |   |   |
|   |   | Wider outcomes assessment (PIPS, SDQ)           |   |   |
| 2,3 or 4 Children receiving NC in Summer Term 2010                      | Sandwell A                                      | Sandwell B                                      | Sandwell A (Entry)                          | Sandwell B (Exit)                           |
|   |   | INDEPENDENT TEST Progress in Maths 6/7          |   |   |
|   |   | Wider Outcomes assessment (PIPS, SDQ)           |   |   |
| <b>Normal Practice and required by Evaluation</b>                       |   |   |   |   |
| <b>Additional testing/assessment required by Evaluation</b>             |   |   |   |   |

### STATISTICAL ANALYSIS

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation. The primary outcome is the Progress in Maths 6/7 NFER Nelson test. The difference between the intervention group and the control group will be compared. We will undertake a regression analysis with the dependent variable as the post-test. As well as group allocation we will also include pre-test, age and gender as explanatory variables. School will also be included in the regression models. This is because the children will be clustered by school and there is a possibility that there may be a 'teacher effect'. The anonymity of all schools, children and teachers will be preserved for all analyses and there will be no presentation or comparison of the results from individual schools or teachers. Subgroup analyses are planned to assess the effectiveness of the intervention for children with different learner characteristics (EAL, gender etc).

The results from the Autumn and Spring terms will be combined, and subgroup analyses will be undertaken to investigate the impact of term of delivery and the impact of training.

## QUALITY ASSURANCE PROCEDURES FOR DESIGNING AND REPORTING RCTs: THE CONSORT GUIDELINES

We have designed and we will report the trial described above using the CONSORT guidelines or statement (Altman *et al*, 2001). CONSORT was developed by a collaboration of medical journal editors and leading trial methodologists to ensure that medical trials were conducted and reported to the highest standards. CONSORT has recently been adopted by leading psychological journals. Some of the co-applicants (Hulme, Torgerson C, and Torgerson D) have used the CONSORT approach to design and report recent trials in education (Brooks *et al*, 2006; Brooks *et al*, 2008, *in press*) and Torgerson C has published minor amendments to CONSORT making it suitable to be applied more widely to educational trials (Torgerson *et al*, 2002a; Torgerson *et al*, 2002b; Torgerson *et al*, 2003).

Applying the CONSORT guidelines to the design of trials ensures that key methodological criteria, such as the method of randomisation, are explicitly reported. This allows the reader to judge whether or not the trial is of high quality. Because we have designed the Every Child Counts Trial 2 around the CONSORT statement this will ensure that it is conducted to the highest quality standards as well as being reported to these standards. Because this trial will be of such high profile we anticipate that an additional benefit of this study will be to promote the wider use of CONSORT in the design and reporting of social science trials.

## RESEARCH ETHICS AND DATA MANAGEMENT

As noted above, we will submit our research plans (Protocol) for the trial to The University of York Humanities and Social Science Ethics Committee for ethical approval (200509). In principle, however, we do not anticipate any ethical barriers to the research. Data processing and management will abide by current data protection regulations. All data will be stored on secure servers that are password protected. The York Trials Unit has over 10 years' experience of securely storing health related data and we will follow their standardised operating procedures for secure data storage. All electronic data can be held indefinitely. We will use the SRA research ethics framework (see Appendix B for full data protection issues).

### March 2009

- Submit Trial Protocol to Operational Group for comments.

### Mar/April/May/June 2009

- Submit revised Trial Protocol to Operational Group for approval
- Submit Trial Protocol to Research Ethics Committee, University of York for approval
- Submit Trial Protocol to ECC Advisory and Evaluation Research Advisory Groups for approval
- Start recruitment of schools
- Trial 2 conference at DCSF to launch trial (all Headteachers and Numbers Count teachers in trial) (June 18<sup>th</sup> 2009)

### Apr/May/Jun/Jul 2009

- Trial co-ordinator works with schools to set up procedures for the trial including recruitment, selection, randomisation, pre-testing, post-testing, data collection, attrition etc.

### **September 2009**

- Pre-testing of all children
- Randomisation (Trials Unit)

### **Jan 2010**

- Post-testing of all children
- Post-testing for wider outcomes (quantitative)
- First analysis

### **Mar 2010**

- Post-testing 2 of all children

### **May to July 2010**

- **Interim feedback to Operational Group on Trial 2 outcomes (June)**
- Post-testing 3 data
- Second analysis

### **October to December 2010**

- Meeting of Research Advisory Group
- Submit draft of Final Report to Operational Group, Advisory Group and Research Advisory Group
- Submit Final Report

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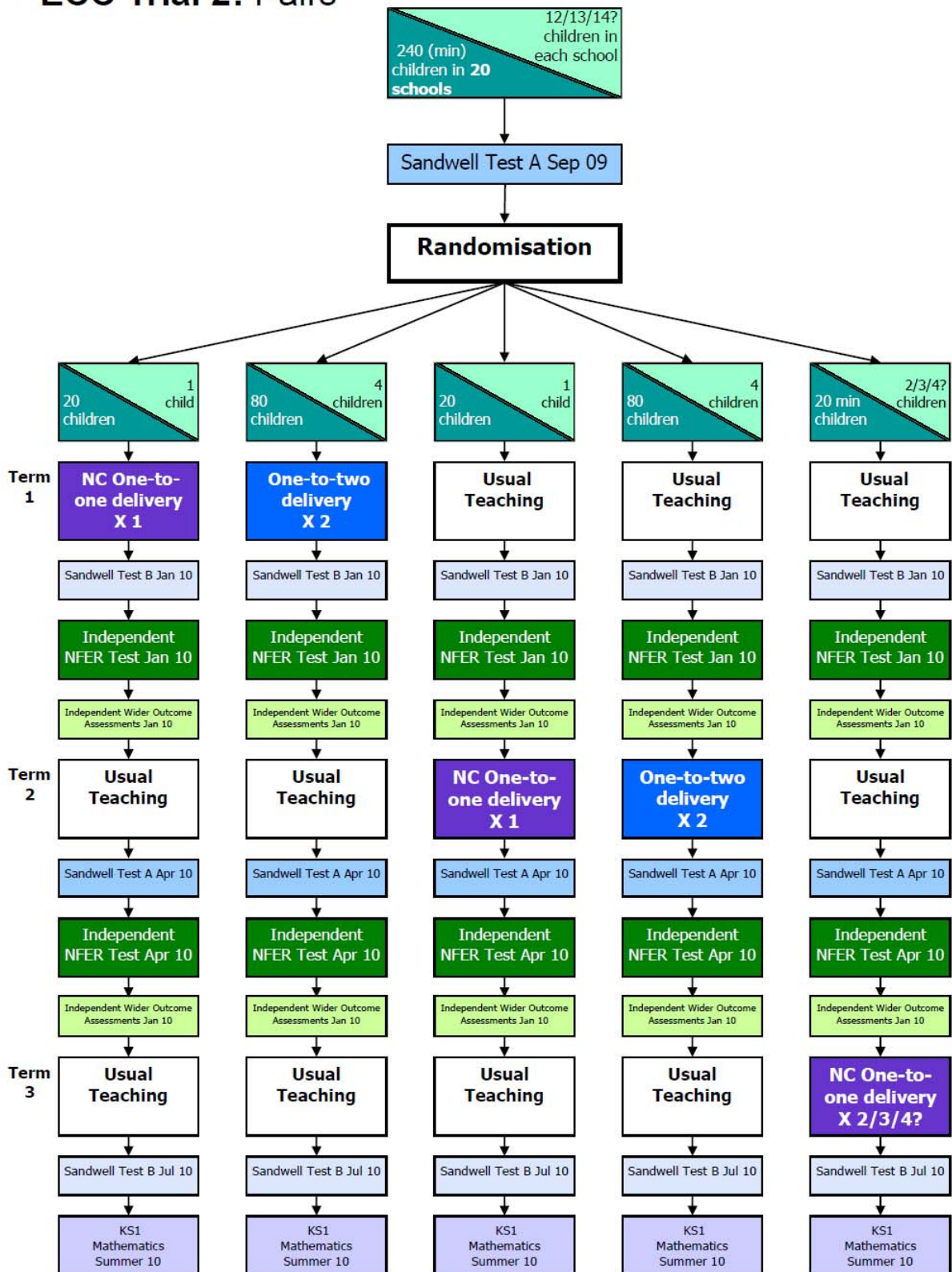


## **Appendices**

- Appendix A: Trial Design Diagram Pairs**
- Appendix B: Trial Design Diagram Triplets**
- Appendix C: Trial Design Diagram Triplets for Schools with Barclays Funding**
- Appendix D: Data Protection Issues Document**
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- Appendix Q: Flow of Actions Pairs**
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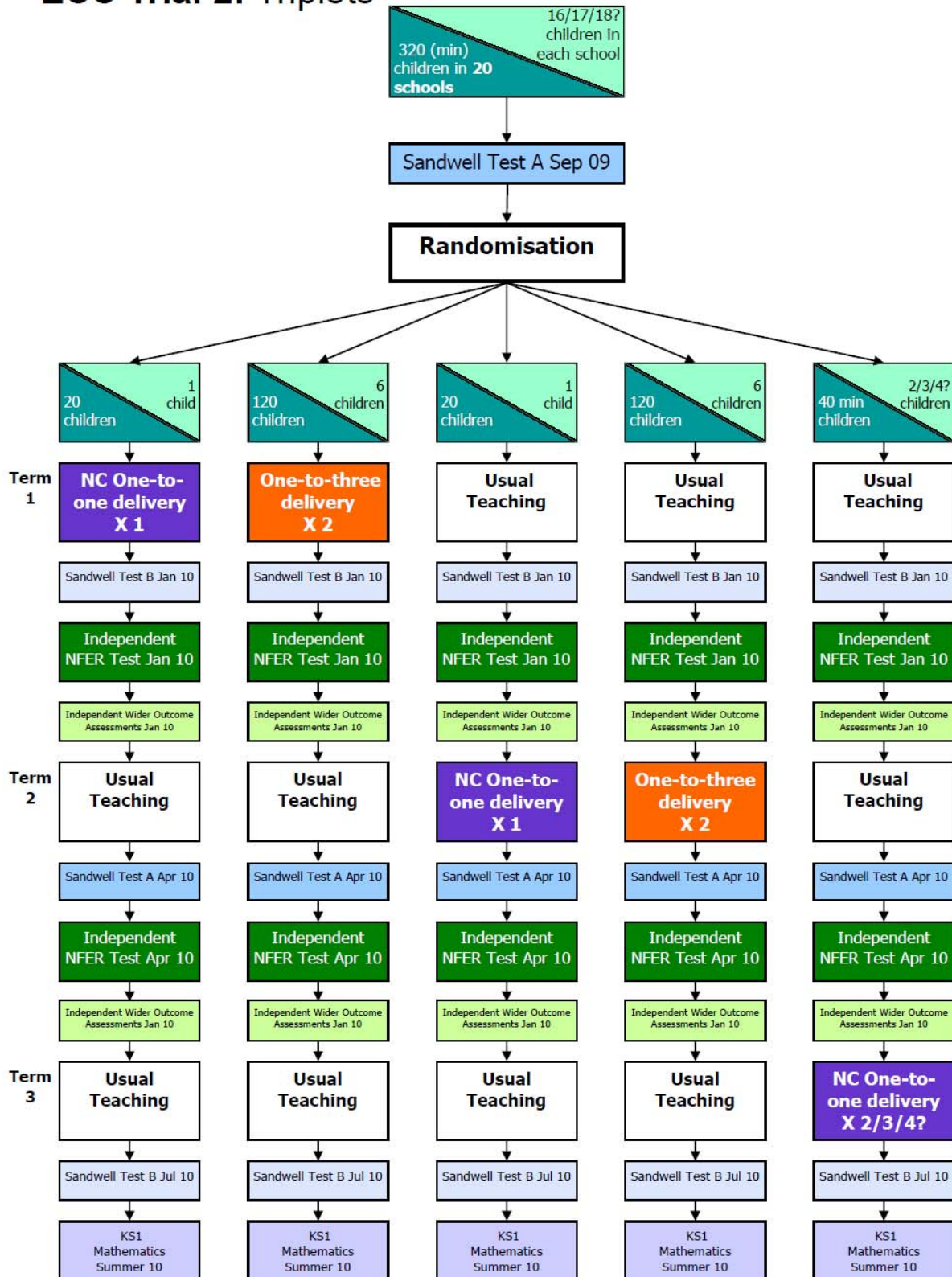
# Appendix A: Trial Design Diagram Pairs

## ECC Trial 2: Pairs



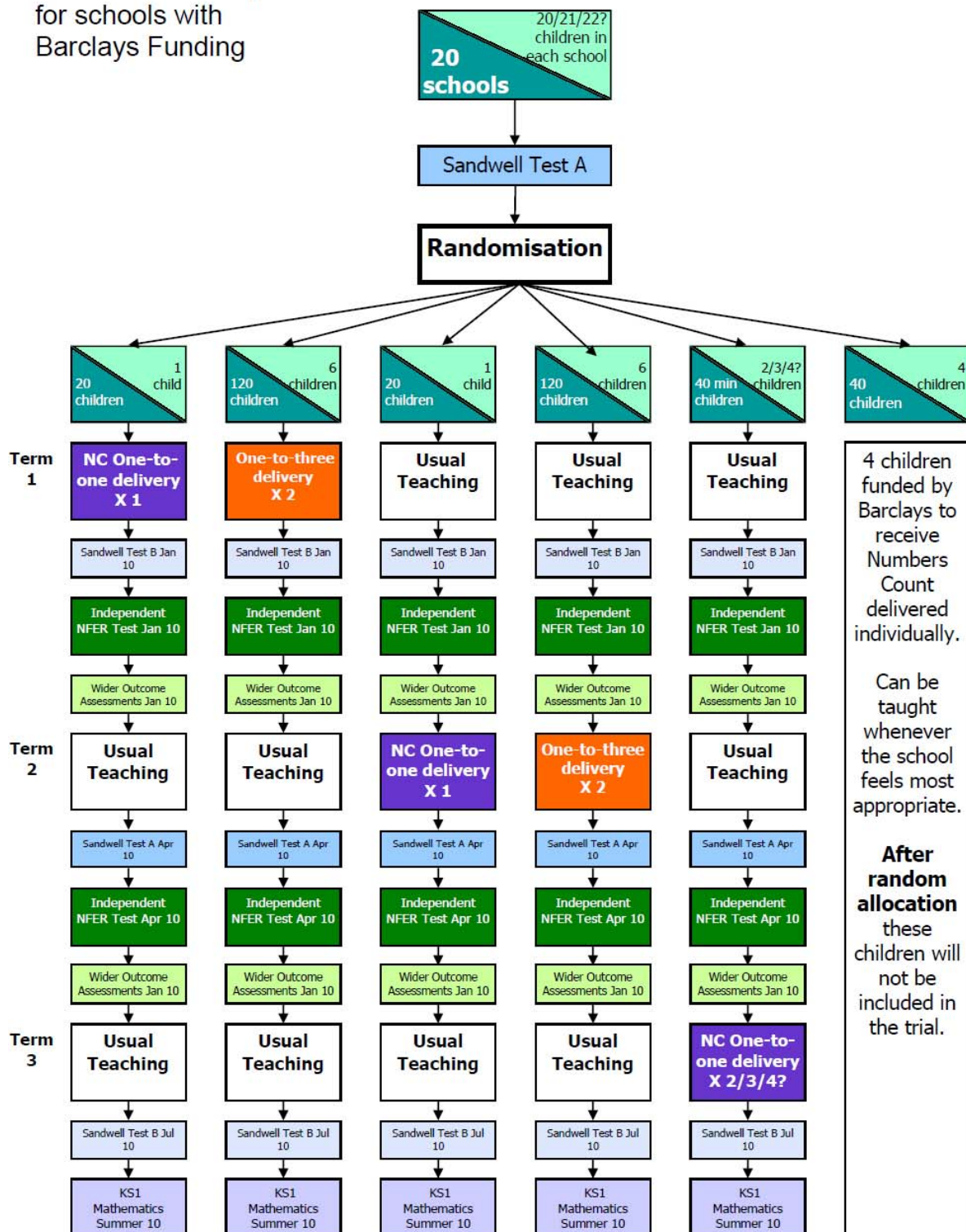
## Appendix B: Trial Design Diagram Triplets

### ECC Trial 2: Triplets



# Appendix C Trial Design Diagram Triplets – for Schools with Barclays Funding

## ECC Trial 2: Triplets for schools with Barclays Funding



## **Appendix D: Data Protection Issues Document**

### **Evaluation of Every Child Counts**

#### **Data Protection Procedures**

The level of security necessary for this evaluation is '**RESTRICTED**'. This is because it is an evaluation of a sensitive policy intervention, and involves individual case details in Trial 1. Compromise of data collected and analysed in the evaluation could disadvantage the government in policy development, or could cause distress to individuals.

Below we provide a detailed general statement on our data security policy during data collection and analysis and arrangements for the safe and secure transfer of data. These measures will ensure that we comply with the Data Protection Act 1998.

#### **Detailed general statement**

The University of York shall observe its obligations under the Data Protection Act 1998 and shall comply at all times with the Act.

All hard and electronic data will be marked 'Restricted'. We will store all hard data at York protected by at least two barriers within a secure building (locked filing cabinet or container within locked office in secure building). When we dispose of the hard data we will either shred within the office or dispose through the waste disposal bags marked 'confidential disposal'. All electronic data will be stored on restricted access/password protected files. Access will be restricted to members of the evaluation team (4 core members plus statistician and economist). When we dispose of electronic data we will delete all copies including data stored on USBs. If we need to transfer the data internally at either institution we will do so by e-mail or in double sealed envelopes; if we need to transfer data between the two institutions we will do so either by e-mail or by special delivery or secure courier. Discussions about the restricted data will always take place face-to-face and not on the telephone. Data will not be faxed. If any of the core team members or statistician or economist works from home or when travelling this will only be permitted with the lead applicant's permission, and compliance with all measures above will be required. Photocopying will be permitted, but this will be restricted to essential copies only and circulation will be restricted.

#### **Detailed specific arrangements**

This will involve:

Recruitment of schools, randomisation of pupils, data collection (Sandwell Test results A and B pre-, post, and follow-up tests, KS2 data), data analysis for Trial 2 (overall mean effect sizes with confidence intervals; sub-group analyses) and economic evaluation.

All recruitment, randomisation, data collection and data analysis procedures during the trial phase of the evaluation as outlined in this document will be followed. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.).

In addition, informed, positive consent will be obtained from all participants using an opt-in clause in the consent document relating to participation in the intervention. An information

sheet will also be given to all participant children, teachers and head teachers which will outline the purpose(s) for which we are gathering or processing their data, who will hold it, if it will be disclosed to anyone, how long it will be retained etc and what will happen to it.

Electronic data will be stored on access protected personal computers and only authorised York staff will have access (3 core team members CT, HA and CH). Backups will be made on secure servers at York. Written notes will be stored when not in use in locked filing cabinets. Generally these will be copied to computer files, after which the notes will be destroyed. Any hand written notes not transferred will be destroyed six months after the end of the project. Electronic data will be retained on the secure servers at York indefinitely.

## **Appendix E: Invitation to Trial 2 Conference: Morning Session**

08.05.09

Dear Headteacher and Numbers Count teacher

### **Evaluation of Every Child Counts: invitation to a conference for schools Thursday 18<sup>th</sup> June 2009, Westminster, London**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, the evaluation will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money.

Your school has been selected to participate in one strand of the evaluation: a randomised controlled trial to investigate the impact of Numbers Count when delivered to an individual child, compared to the impact when trained Numbers Count teachers adapt their methodology to deliver an intervention to triplets of children.

#### **Why is the evaluation important?**

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for triplets of children.

#### **What does the trial involve?**

The trial your school will be involved in will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by children who receive Numbers Count as individuals with those who receive an adapted intervention in triplets. The children you select to receive the intervention during the school year 2009-10 will be randomly allocated by the University of York to receive tuition as individuals or as triplets of children. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. Changes to the normal delivery of Numbers Count are essential in order to ensure a robust assessment of the intervention's effectiveness.

#### **How do we find out more?**

The University of York will run a conference in June for all Headteachers and Numbers Count teachers of participating schools, plus Teacher Leaders for participating LAs. We are therefore writing to invite you and your Numbers Count teacher to attend the conference on **Thursday 18<sup>th</sup> June 2009** at the DCSF, Sanctuary Buildings, Great Smith Street, London, SW1P 3BT.

We will present the design of the study in detail and outline the changes to the way in which the intervention will need to be delivered in your school for the purposes of the evaluation. The conference will also provide more information on the support that will be available to

teachers who will be delivering an intervention to triplets of children. We will also be available to answer your questions. The Agenda for the conference is given below.

The DCSF will cover reasonable travel expenses for attendees from schools outside the London region (e.g. standard class rail travel). This can be claimed after the event and proof of purchase must be retained. We would be grateful if you could book off-peak/saver tickets wherever possible.

Please confirm your attendance at the conference by contacting Hannah Ainsworth (by e-mail or telephone, details below) by 31<sup>st</sup> May 2009. Once you have confirmed attendance we will send out a map showing the venue, and an information sheet about the trial.

There will also be time at the conference for you to meet Headteachers and Numbers Count teachers from participating schools from other local authorities, over lunch.

### **Agenda for conference**

10.00 Registration/tea and coffee

10.30 Presentation by the University of York evaluation team, followed by discussion/questions

12.30 Lunch

1.30 Close

We look forward to meeting you on Thursday 18<sup>th</sup> June.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
01904 328158



## **Appendix F: Invitation to Trial 2 Conference: Afternoon Session**

08.05.09

Dear Headteacher and Numbers Count teacher

### **Evaluation of Every Child Counts: invitation to a conference for schools Thursday 18<sup>th</sup> June 2009, Westminster, London**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, the evaluation will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money.

Your school has been selected to participate in one strand of the evaluation: a randomised controlled trial to investigate the impact of Numbers Count when delivered to an individual child, compared to the impact when trained Numbers Count teachers adapt their methodology to deliver an intervention to pairs of children.

#### **Why is the evaluation important?**

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for pairs of children.

#### **What does the trial involve?**

The trial your school will be involved in will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by children who receive Numbers Count as individuals with those who receive an adapted intervention in pairs. The children you select to receive the intervention during the school year 2009-10 will be randomly allocated by the University of York to receive tuition as individuals or as pairs of children. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. Changes to the normal delivery of Numbers Count are essential in order to ensure a robust assessment of the intervention's effectiveness.

#### **How do we find out more?**

The University of York will run a conference in June for all Headteachers and Numbers Count teachers of participating schools, plus Teacher Leaders for participating LAs. We are therefore writing to invite you and your Numbers Count teacher to attend the conference on **Thursday 18<sup>th</sup> June 2009** at the DCSF, Sanctuary Buildings, Great Smith Street, London, SW1P 3BT.

We will present the design of the study in detail and outline the changes to the way in which the intervention will need to be delivered in your school for the purposes of the evaluation. The conference will also provide more information on the support that will be available to

teachers who will be delivering an intervention in pairs. We will also be available to answer your questions. The Agenda for the conference is given below.

The DCSF will cover reasonable travel expenses for attendees from schools outside the London region (e.g. standard class rail travel). This can be claimed after the event and proof of purchase must be retained. We would be grateful if you could book off-peak/saver tickets wherever possible.

Please confirm your attendance at the conference by contacting Hannah Ainsworth (by e-mail or telephone, details below) by 31<sup>st</sup> May 2009. Once you have confirmed attendance we will send out a map showing the venue, and an information sheet about the trial.

There will also be time at the conference for you to meet Headteachers and Numbers Count teachers from participating schools from other local authorities, over lunch.

### **Agenda for conference**

12.30 Lunch

1.30 Presentation by the University of York evaluation team, followed by discussion/questions

3.30 Close

We look forward to meeting you on Thursday 18<sup>th</sup> June.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

01904 328158

## **Appendix G: Information Sheet\*/Consent for Parents**

\* Note: This information to be given to the parents or carers when a child has been selected to take part in Every Child Counts at the Every Child Counts discussion, and the information in it should be included in the discussion.

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### **Independent Evaluation of Every Child Counts**

#### **Information Sheet for Parents**

The Universities of York and Durham have been asked by the Department for Children, Schools and Families (DCSF) to evaluate the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

Your child's school has been chosen to take part in one part of the evaluation: a randomised controlled trial to investigate the impact of Numbers Count lessons on children's maths skills and confidence when they are delivered to an individual child and the impact of adapted lessons when they are delivered to small groups of children. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects.

#### **Why is the evaluation important?**

The findings of the evaluation will help the government make sure the Every Child Counts programme works well before it is made available to children across the country, so your child's participation in the trial will be very important in helping to develop the programme. One-to-one teaching and small group teaching are both believed to be highly beneficial for your child, however at the moment we cannot be sure which works the best, which is why this evaluation is so important.

#### **What does the trial involve?**

The trial your child's school will be involved in will assess the effectiveness of the Numbers Count intervention when it is delivered to a child individually compared with the effectiveness of a similar intervention delivered to a small group of children. We will be able to measure how effective the interventions are by comparing the improvement made by the children who receive Numbers Count individually with children who receive a similar intervention in small groups.

#### **What will this mean for my child?**

Rather than the school making decisions about the intervention that your child receives the evaluation team will decide whether your child is taught individually or in a small group and in what term your child receives the intervention. The evaluation team use a computer programme which allocates the children to groups randomly. The process of randomisation is important because it allows us to assess the impact of the intervention in the most robust way. A small amount of additional assessment (maths and confidence/well-being) of the children may be necessary, but we will work very closely with your child's school to ensure that any additional burden on the children will be minimal. Your child's name will not be used anywhere in the evaluation. Your child will receive some form of extra teaching which is believed to be very helpful.

### What will happen to the children's assessments?

All assessments will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

If you would like to contact the researchers to discuss anything please contact Hannah Ainsworth (Trial Co-ordinator) at the University of York in the first instance ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158)

## Independent Evaluation of Every Child Counts Parental Consent Form

### Home School Contract

#### PARENT / CARER

I give permission for ..... to take part in Every Child Counts lessons at ..... School and for his/her (*please delete*) test results to be included anonymously in the independent evaluation being carried out by the University of York and Durham University.

I will give my support by making sure that he/she:

- attends school regularly and arrives on time
- has support at home with maths games and activities for homework.

Name:

Signed:

Date:

#### SCHOOL

The School agrees to:

- provide daily mathematics lessons
- give home activities which are related to the work that has been taught
- keep the parent / carer informed of progress made by the child.

Name:

Signed:

Date:

## **Appendix H: Summary Information Sheet for Headteachers and Numbers Count Teachers PAIRS**

### **Evaluation of Every Child Counts**

## **Summary Information Sheet for Headteachers and Numbers Count Teachers**

### **Trial 2: Pairs**

#### **Background**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an adapted intervention delivered to pairs or triplets of children by Numbers Count teachers. The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers.

Your school has been selected to be included in the sample of about 20 schools which will take part in Trial 2: Pairs. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, Trial 2: Pairs will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for small groups of children.

#### **Trial 2: Pairs**

Trial 2: Pairs has been designed to investigate the impact of delivering an intervention to pairs of children on pupil outcomes, through a Randomised Controlled Trial. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects. The children you select to receive numeracy intervention during the school year 2009-10 will be randomly allocated by the University of York into two groups. Children in the first group will receive standard one-to-one Numbers Count, and children in the second group will receive an adapted intervention in pairs. Teachers will be asked to use Numbers Count resources and their knowledge of Numbers Count procedures to teach pairs of children. We will then be able to make a fair comparison between the two models of delivery, by measuring the difference in pupil outcomes when Numbers Count is delivered individually in the usual way or when an adapted intervention is delivered by Numbers Count teachers to pairs of children.

In some respects the delivery of Numbers Count within the wider Every Child Counts initiative will be exactly the same as usual (same resources and programme phases); however, so that a rigorous evaluation can be conducted some changes are required. We

have tried to minimise these changes as much as possible. A 'Flow of Actions' sheet has been developed which details the actions that are required by each school taking part in Trial 2: Pairs. The diagram also shows the actions being taken by the York evaluation team, shown in purple.

### **Ethical Issues**

All information and test results collected during the trial will remain confidential and will be stored according to data protection guidelines. No names or other identifying information will be used in any reporting. This evaluation has received ethical approval from the Humanities and Social Sciences Ethics Committee at the University of York.

The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact for any queries about the conduct of the trial (see below for contact details). Please feel free to get in contact with any queries or questions throughout the duration of the trial.

### **Evaluation Team**

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## **Appendix I: Summary Information Sheet for Headteachers and Numbers Count Teachers TRIPLETS**

### **Evaluation of Every Child Counts**

#### **Summary Information Sheet for Headteachers and Numbers Count Teachers**

#### **Trial 2: Triplets**

##### **Background**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an adapted intervention delivered to pairs or triplets of children by Numbers Count teachers. The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers.

Your school has been selected to be included in the sample of about 20 schools which will take part in Trial 2: Triplets. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, Trial 2: Triplets will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for small groups of children.

##### **Trial 2: Triplets**

Trial 2: Triplets has been designed to investigate the impact of delivering an intervention to triplets of children on pupil outcomes, through a Randomised Controlled Trial. A randomised controlled trial uses a method like coin toss or lottery to form two or more groups which are similar in all respects. The children you select to receive numeracy intervention during the school year 2009-10 will be randomly allocated by the University of York into two groups. Children in the first group will receive standard one-to-one Numbers Count, and children in the second group will receive an adapted intervention in triplets. Teachers will be asked to use Numbers Count resources and their knowledge of Numbers Count procedures to teach triplets of children. We will then be able to make a fair comparison between the two models of delivery, by measuring the difference in pupil outcomes when Numbers Count is delivered individually in the usual way or when an adapted intervention is delivered by Numbers Count teachers to triplets of children.

In some respects the delivery of Numbers Count within the wider Every Child Counts initiative will be exactly the same as usual (same resources and programme phases); however, so that a rigorous evaluation can be conducted some changes are required. We

have tried to minimise these changes as much as possible. A 'Flow of Actions' sheet has been developed which details the actions that are required by each school taking part in Trial 2: Triplets. The diagram also shows the actions being taken by the York evaluation team, shown in purple.

### **Ethical Issues**

All information and test results collected during the trial will remain confidential and will be stored according to data protection guidelines. No names or other identifying information will be used in any reporting. This evaluation has received ethical approval from the Humanities and Social Sciences Ethics Committee at the University of York.

The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact for any queries about the conduct of the trial (see below for contact details). Please feel free to get in contact with any queries or questions throughout the duration of the trial.

### **Evaluation Team**

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158



## **Appendix J: Detailed Information Sheet for Headteachers and Numbers Count Teachers PAIRS**

### **Evaluation of Every Child Counts**

#### **Detailed Information Sheet for Headteachers and Numbers Count Teachers**

#### **Trial 2: Pairs**

##### **Background**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an adapted intervention delivered to pairs or triplets of children by Numbers Count teachers. The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers.

Your school has been selected to be included in the sample of about 20 schools which will take part in Trial 2: Pairs. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, Trial 2: Pairs will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for small groups of children.

**This detailed Information Sheet should be used in conjunction with the 'Flow of Actions' sheet which has been provided. The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact throughout the duration of the trial if you have any queries (see below for contact details). The additional testing of the children is necessary, but we will work very closely with schools to ensure that any additional burden on the teachers and children will be minimal.**

##### **Teacher Survey**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with a paper based/online survey for teachers and instructions of how to complete this.

##### **Selection of children to be involved in the Evaluation**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with: parental information sheets and consent forms; a form on which to record names and UPNs of children selected for the evaluation; and the template for the collection of Sandwell A test results.

- At the beginning of the Autumn term 2009 each school will make the final selection of children who will be involved in the evaluation. **The school should select a minimum of 12 children and a maximum of 14 children who will be involved in the evaluation.** The school has the flexibility at this point to decide whether they would like to teach two, three or four children as individuals in the Summer term 2010. This will allow schools to keep 1 or 2 slots free in the Summer term if they wish, we can be used either for wider impact work within the school or to teach new children who arrive in the school during the year who may need the Numbers Count intervention.
- The evaluation will be explained and discussed by the NC teachers with parents/carers at the routine NC meeting (Note: we have provided an Information Sheet for parents and a parental consent form to cover the evaluation aspect of NC. For the purposes of the evaluation gaining a signed parental consent form is compulsory).
- The school returns all signed parental consent forms and the pupil names and UPNs form (detailing all children selected for the evaluation) to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.

### **First evaluation test**

- NC Teachers go through the Information Sheet for children with each child before testing.
- At the beginning of the Autumn term 2009 **ALL** children selected for the evaluation will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the children's name (optional), pupil ID (UPN) and Sandwell A test result.
- When completed, this form should be returned to The Trial Co-ordinator using an appropriate method to be confirmed at a later date.

Note: Please enter Sandwell test results for children receiving an intervention online as normal.

### **Random allocation**

- Once the Trial co-ordinator has received all the information from schools (Names, UPNs and Sandwell A test results of all children selected for the evaluation, and signed parental consent forms) the selected children will be allocated at random to receive the intervention as individuals (NC) or in pairs (adapted intervention).
- The Trial co-ordinator will inform schools of the allocation. The schools will then be able to decide which children will be taught together in pairs (from the children that have been allocated to the pairs intervention).
- Schools will inform the Trial co-ordinator of their decision. The selected children will then be randomly allocated to receive the intervention in the Autumn, Spring or Summer terms.
- The Trial Co-ordinator will inform each school of the allocations.

- The allocations must NOT be changed as this would jeopardise the results of the evaluation.

### ***Why is random allocation important?***

Random allocation is important because it is the best method of ensuring that the groups of children receiving the two types of intervention (individual or pair delivery) are balanced in all respects. This means that when we compare the outcomes for the pupils who have received the intervention (NC) as *individuals* with those who have received the adapted intervention as *pairs* we are making a fair comparison and can be sure that any difference we see between the children is due to the different intervention and not some other factor.

### ***Who will do the random allocation and how?***

The random allocation will be done by the independent third party Trial Statistician at the University of York, using pupil ID only (not names). The random allocation will be done using a computer software package.

### **Delivery of intervention – Autumn Term**

- The NC teacher will teach a total of five children in the Autumn term: one child individually, plus two pairs of children.
- The one child allocated to individual Autumn term delivery (NC) will receive the NC intervention as usual. The four children allocated to pairs delivery Autumn term will be taught by the NC teachers who will adapt the NC resources to teach the children in pairs.
- Where children are to be taught in pairs, their two-week diagnostic assessment will also be undertaken as a pair, not one-to-one.
- Where children are to be taught in pairs, teachers will plan for them as pairs, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for pairs as well as children taught one-to-one.

### **Second evaluation tests**

- At the beginning of the Spring term 2010 **ALL** children selected for the evaluation will be tested using Sandwell B by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test result.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Spring term. The independent tester will test **ALL** the selected children using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.

Note: Please enter Sandwell test results for children receiving an intervention individually or in as a pair online as normal.

### **Delivery of intervention – Spring Term**

- The NC teacher will teach a total of five children in the Spring term: one child individually, plus two pairs of children.
- The one child allocated to individual Spring term delivery (NC) will receive the NC intervention as usual. The four children allocated to pairs delivery Spring term will be taught by the NC teachers who will adapt the NC resources to teach the children in pairs.
- Where children are to be taught in pairs, their two-week diagnostic assessment will also be undertaken as a pair, not one-to-one.
- Where children are to be taught in pairs, teachers will plan for them as pairs, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for pairs as well as children taught one-to-one.

### **Third evaluation tests**

- At the beginning of the Summer term 2010 **ALL** children selected for the evaluation will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell A test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Summer term 2010. The independent tester will test **ALL** the selected children using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.

Note: Please enter Sandwell test results for children receiving an intervention individually or in as a pair online as normal.

### **Delivery of intervention – Summer Term**

- The 2, 3 or 4 children allocated to individual Summer term delivery (NC) will receive the NC intervention as usual.
- Any spare slots can be used for wider impact work or for teaching new children who have joined the school who may need the NC intervention.

### **Fourth evaluation test**

- At the end of the Summer term 2010 **ALL** children selected for the evaluation will be tested using Sandwell B by the schools.

- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will collect KS1 assessments for ALL children selected for the evaluation.

Note: Please enter Sandwell test results for children receiving an intervention online as normal.

### **What will happen to the trial data?**

All test results will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

### **Evaluation Team**

*Please feel free to get in touch with the Evaluation team with any questions, queries or concerns throughout the duration of the trial.*

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## **Appendix K: Detailed Information Sheet for Headteachers and Numbers Count Teachers TRIPLETS**

### **Evaluation of Every Child Counts**

#### **Detailed Information Sheet for Headteachers and Numbers Count Teachers**

#### **Trial 2: Triplets**

##### **Background**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an adapted intervention delivered to pairs or triplets of children by Numbers Count teachers. The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers.

Your school has been selected to be included in the sample of about 20 schools which will take part in Trial 2: Triplets. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, Trial 2: Triplets will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for small groups of children.

**This detailed Information Sheet should be used in conjunction with the 'Flow of Actions' sheet which has been provided. The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact throughout the duration of the trial if you have any queries (see below for contact details). The additional testing of the children is necessary, but we will work very closely with schools to ensure that any additional burden on the teachers and children will be minimal.**

##### **Teacher Survey**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with a paper based/online survey for teachers and instructions of how to complete this.

##### **Selection of children to be involved in the Evaluation**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with: parental information sheets and consent forms; a form on which to record names and UPNs of children selected for the evaluation; and the template for the collection of Sandwell A test results.

- At the beginning of the Autumn term 2009 each school will make the final selection of children who will be involved in the evaluation. **The school should select a minimum of 16 children and a maximum of 18 children who will be involved in the evaluation.** The school has the flexibility at this point to decide whether they would like to teach two, three or four children as individuals in the Summer term 2010. This will allow schools to keep 1 or 2 slots free in the Summer term if they wish, we can be used either for wider impact work within the school or to teach new children who arrive in the school during the year who may need the Numbers Count intervention.
- The evaluation will be explained and discussed by the NC teachers with parents/carers at the routine NC meeting (Note: we have provided an Information Sheet for parents and a parental consent form to cover the evaluation aspect of NC. For the purposes of the evaluation gaining a signed parental consent form is compulsory).
- The school returns all signed parental consent forms and the pupil names and UPNs form (detailing all children selected for the evaluation) to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.

### **First evaluation test**

- NC Teachers go through the Information Sheet for children with each child before testing.
- At the beginning of the Autumn term 2009 **ALL** children selected for the evaluation will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the children's name (optional), pupil ID (UPN) and Sandwell A test result.
- When completed, this form should be returned to The Trial Co-ordinator using an appropriate method to be confirmed at a later date.

Note: Please enter Sandwell test results for all children receiving an intervention online as normal.

### **Random allocation**

- Once the Trial co-ordinator has received all the information from schools (Names, UPNs and Sandwell A test results of all children selected for the evaluation, and signed parental consent forms) the selected children will be allocated at random to receive the intervention as individuals (NC) or in triplets (adapted intervention).
- The Trial co-ordinator will inform schools of the allocation. The schools will then be able to decide which children will be taught together in triplets (from the children that have been allocated to the triplets intervention).
- Schools will inform the Trial co-ordinator of their decision. The selected children will then be randomly allocated to receive the intervention in the Autumn, Spring or Summer terms.
- The Trial Co-ordinator will inform each school of the allocations.

- The allocations must NOT be changed as this would jeopardise the results of the evaluation.

### ***Why is random allocation important?***

Random allocation is important because it is the best method of ensuring that the groups of children receiving the two types of intervention (individual or triplet delivery) are balanced in all respects. This means that when we compare the outcomes for the pupils who have received the intervention (NC) as *individuals* with those who have received the adapted intervention as *triplets* we are making a fair comparison and can be sure that any difference we see between the children is due to the different intervention and not some other factor.

### ***Who will do the random allocation and how?***

The random allocation will be done by the independent third party Trial Statistician at the University of York, using pupil ID only (not names). The random allocation will be done using a computer software package.

### **Delivery of intervention – Autumn Term**

- The NC teacher will teach a total of seven children in the Autumn term: one child individually, plus two triplets of children.
- The one child allocated to individual Autumn term delivery (NC) will receive the NC intervention as usual. The six children allocated to triplets delivery Autumn term will be taught by the NC teachers who will adapt the NC resources to teach the children in triplets.
- Where children are to be taught in triplets, their two-week diagnostic assessment will also be undertaken as a triplet, not one-to-one.
- Where children are to be taught in triplets, teachers will plan for them as triplets, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for triplets as well as children taught one-to-one.

### **Second evaluation tests**

- At the beginning of the Spring term 2010 **ALL** children selected for the evaluation will be tested using Sandwell B by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test result.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Spring term. The independent tester will test **ALL** the selected children using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.



Note: Please enter Sandwell test results for all children receiving an intervention whether individually or in a triplet online as normal.

### **Delivery of intervention – Spring Term**

- The NC teacher will teach a total of seven children in the Spring term: one child individually, plus two triplets of children.
- The one child allocated to individual Spring term delivery (NC) will receive the NC intervention as usual. The six children allocated to triplets delivery Spring term will be taught by the NC teachers who will adapt the NC resources to teach the children in triplets.
- Where children are to be taught in triplets, their two-week diagnostic assessment will also be undertaken as a triplet, not one-to-one.
- Where children are to be taught in triplets, teachers will plan for them as triplets, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for triplets as well as children taught one-to-one.

### **Third evaluation tests**

- At the beginning of the Summer term 2010 **ALL** children selected for the evaluation will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell A test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Summer term 2010. The independent tester will test **ALL** the selected children using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.

Note: Please enter Sandwell test results for all children receiving an intervention whether individually or in a triplet online as normal.

### **Delivery of intervention – Summer Term**

- The 2, 3 or 4 children allocated to individual Summer term delivery (NC) will receive the NC intervention as usual.
- Any spare slots can be used for wider impact work or for teaching new children who have joined the school who may need the NC intervention.

#### **Fourth evaluation test**

- At the end of the Summer term 2010 **ALL** children selected for the evaluation will be tested using Sandwell B by the schools.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will collect KS1 assessments for ALL children selected for the evaluation.

Note: Please enter Sandwell test results for all children receiving an intervention online as normal.

#### **What will happen to the trial data?**

All test results will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

#### **Evaluation Team**

*Please feel free to get in touch with the Evaluation team with any questions, queries or concerns throughout the duration of the trial.*

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## **Appendix L: Detailed Information Sheet for Headteachers and Numbers Count Teachers TRIPLETS for Schools with Barclays Funding**

### **Evaluation of Every Child Counts**

#### **Detailed Information Sheet for Headteachers and Numbers Count Teachers for Schools with Barclays funding**

#### **Trial 2: Triplets**

##### **Background**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an adapted intervention delivered to pairs or triplets of children by Numbers Count teachers. The findings of the overarching evaluation will inform the national roll out of ECC from 2011, so your participation in the trial will be very important in helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers.

Your school has been selected to be included in the sample of about 20 schools which will take part in Trial 2: Triplets. Following the recommendations in the Williams Independent Review of Mathematics Teaching in Early Years Settings and Primary Schools, Trial 2: Triples will seek to establish whether individual or small group delivery of an intensive numeracy intervention is most effective and offers best value for money. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the impact and cost-effectiveness of Numbers Count compared to the adapted intervention for small groups of children.

**This detailed Information Sheet should be used in conjunction with the 'Flow of Actions' sheet which has been provided. The Trial Co-ordinator (Hannah Ainsworth) will be your first point of contact throughout the duration of the trial if you have any queries (see below for contact details). The additional testing of the children is necessary, but we will work very closely with schools to ensure that any additional burden on the teachers and children will be minimal.**

##### **Teacher Survey**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with a paper based/online survey for teachers and instructions of how to complete this.

##### **Selection of children to be involved in the Evaluation**

- The Trial Co-ordinator will contact each school at the beginning of the Autumn term 2009 with: parental information sheets and consent forms; a form on which to record

names and UPNs of children selected for the evaluation; and the template for the collection of Sandwell A test results.

- At the beginning of the Autumn Term 2009 each school will make the final selection of children who will be involved in the evaluation. **The school should select a minimum of 20 children and a maximum of 22 children who will be involved in the evaluation.** The school has the flexibility at this point to decide whether they would like to teach two, three or four children as individuals in the Summer term 2010. This will allow schools to keep 1 or 2 slots free in the Summer term if they wish, we can be used either for wider impact work within the school or to teach new children who arrive in the school during the year who may need the Numbers Count intervention.
- The evaluation will be explained and discussed by the NC teachers with parents/carers at the routine NC meeting (Note: we have provided an Information Sheet for parents and a parental consent form to cover the evaluation aspect of NC. For the purposes of the evaluation gaining a signed parental consent form is compulsory).
- The school returns all signed parental consent forms and the pupil names and UPNs form (detailing all children selected for the evaluation) to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.

#### **First evaluation test**

- NC Teachers go through the Information Sheet for children with each child before testing.
- At the beginning of the Autumn term 2009 **ALL** children selected for the evaluation will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the children's name (optional), pupil ID (UPN) and Sandwell A test result.
- When completed, this form should be returned to The Trial Co-ordinator using an appropriate method to be confirmed at a later date.

Note: Please enter Sandwell test results for children receiving an intervention online as normal.

#### **Random allocation**

- Once the Trial co-ordinator has received all the information from schools (Names, UPNs and Sandwell A test results of all children selected for the evaluation, and signed parental consent forms) the selected children will be allocated at random to receive the intervention as individuals (NC) or in triplets (adapted intervention). 4 children will also be randomly allocated as 'funded by Barclays'. **The 4 children allocated as 'funded by Barclays' will not remain in the trial after random allocation, schools can deliver the NC intervention individually to these 4 children whenever they feel most appropriate in the school year. The 4 children do not need to take any of the additional tests required for the evaluation. They should however be tested as usual using the Sandwell tests as part of the NC intervention and these results should be entered online as normal.**

- The Trial co-ordinator will inform schools of the allocation. The schools will then be able to decide which children will be taught together in triplets (from the children that have been allocated to the triplets intervention).
- Schools will inform the Trial co-ordinator of their decision. The selected children will then be randomly allocated to receive the intervention in the Autumn, Spring or Summer terms.
- The Trial Co-ordinator will inform each school of the allocations.
- The allocations must NOT be changed as this would jeopardise the results of the evaluation.

### ***Why is random allocation important?***

Random allocation is important because it is the best method of ensuring that the groups of children receiving the two types of intervention (individual or triplet delivery) are balanced in all respects. This means that when we compare the outcomes for the pupils who have received the intervention (NC) as *individuals* with those who have received the adapted intervention as *triplets* we are making a fair comparison and can be sure that any difference we see between the children is due to the different intervention and not some other factor.

### ***Who will do the random allocation and how?***

The random allocation will be done by the independent third party Trial Statistician at the University of York, using pupil ID only (not names). The random allocation will be done using a computer software package.

### **Delivery of intervention – Autumn Term**

- The NC teacher will teach a total of seven children in the Autumn term: one child individually, plus two triplets of children.
- The one child allocated to individual Autumn term delivery (NC) will receive the NC intervention as usual. The six children allocated to triplets delivery Autumn term will be taught by the NC teachers who will adapt the NC resources to teach the children in triplets.
- Where children are to be taught in triplets, their two-week diagnostic assessment will also be undertaken as a triplet, not one-to-one.
- Where children are to be taught in triplets, teachers will plan for them as triplets, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for triplets as well as children taught one-to-one.

### **Second evaluation tests**

- At the beginning of the Spring term 2010 **ALL** children selected for the evaluation (except children funded by Barclays unless required for usual practice) will be tested using Sandwell B by the school.

- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test result.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Spring term. The independent tester will test **ALL** the selected children (except children funded by Barclays) using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.

Note: Please enter Sandwell test results for children receiving an intervention whether individually or in a triplet online as normal.

### **Delivery of intervention – Spring Term**

- The NC teacher will teach a total of seven children in the Spring term: one child individually, plus two triplets of children.
- The one child allocated to individual Spring term delivery (NC) will receive the NC intervention as usual. The six children allocated to triplets delivery Spring term will be taught by the NC teachers who will adapt the NC resources to teach the children in triplets.
- Where children are to be taught in triplets, their two-week diagnostic assessment will also be undertaken as a triplet, not one-to-one.
- Where children are to be taught in triplets, teachers will plan for them as triplets, rather than plan for them individually.
- The length of each teaching session will remain at half an hour, for triplets as well as children taught one-to-one.

### **Third evaluation tests**

- At the beginning of the Summer term 2010 **ALL** children selected for the evaluation (except children funded by Barclays unless required for usual practice) will be tested using Sandwell A by the school.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell A test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator will liaise with the school for an independent tester to visit the school at the beginning of the Summer term 2010. The independent tester will test **ALL** the selected children (except children funded by Barclays) using NFER Nelson Progress in Maths 7 and will also conduct a wider outcomes assessment.

Note: Please enter Sandwell test results for children receiving an intervention whether individually or in a triplet online as normal.

### **Delivery of intervention – Summer Term**

- The 2, 3 or 4 children allocated to individual Summer term delivery (NC) will receive the NC intervention as usual.
- Any spare slots can be used for wider impact work or for teaching new children who have joined the school who may need the NC intervention.

### **Fourth evaluation test**

- At the end of the Summer term 2010 **ALL** children selected for the evaluation (except children funded by Barclays unless required for usual practice) will be tested using Sandwell B by the schools.
- The Trial Co-ordinator will provide each school with forms for recording each of the selected children's name (optional), pupil ID and Sandwell B test results.
- When completed, this will be returned to the Trial Co-ordinator using an appropriate method to be confirmed at a later date.
- The Trial Co-ordinator (Hannah Ainsworth) will collect KS1 assessments for ALL children selected for the evaluation (except children funded by Barclays).

Note: Please enter Sandwell test results for children receiving an intervention online as normal.

### **What will happen to the trial data?**

All test results will be held confidentially at the University of York on secure password protected servers indefinitely. Electronic personal data (name and school only) will be held separately from test data.

### **Evaluation Team**

*Please feel free to get in touch with the Evaluation team with any questions, queries or concerns throughout the duration of the trial.*

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## Appendix M: Information Sheet for Children

### Every Child Counts Research

#### Information for children\*

Some people (researchers) at the Universities of York and Durham have been asked by the government – the Department for Children, Schools and Families (DCSF) to find out how good Every Child Counts is at helping children to get better at numeracy.

Taking part in the research might mean that your teacher does some extra work with you to find out how you are getting on with your learning.

Your teachers will tell the people at the University how you are getting on before and after you do Every Child Counts. This is very important work because it will help the government to know how to help all children in the country get better at maths.

When the researchers tell the government what they have found out they won't put your name in the report.

The researchers will keep the work you have done safely at the University of York.

Thank you very much for helping.

*\* (To be read to the Every Child Counts Pupil by the Numbers Count Teacher: See also the teacher information sheet to explain any other points)*



## Appendix N: Introductory Letter to National Trainers and Teacher Leaders

19.01.09

Dear National Trainer/Teacher Leader

### Evaluation of Every Child Counts

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to conduct an independent evaluation of the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010.

The aim of this letter is to inform you, as National Trainers and Teacher Leaders, about the background to and aims of the evaluation, since a number of schools will be involved in different elements of the evaluation.

#### Why is the evaluation important?

The findings of the overarching evaluation will inform the national roll out of ECC from 2011, helping to develop the programme so that it offers low attaining children nationally the best possible chance of catching up with their peers. The randomised controlled trial methodology that will form part of the evaluation enables us to gather the most robust data possible on the effectiveness of ECC.

There are a number of elements to the evaluation including: a process evaluation of the delivery and management of ECC; and two randomised controlled trials. Trial 1 will look specifically at the impact of Numbers Count when it is delivered on a one to one basis and Trial 2 will look at the impact of an intervention delivered to pairs or triplets of children by Numbers Count teachers compared with one-to-one delivery of Numbers Count.

#### What does Trial 1 involve?

68 schools in the Local Authority areas of Middlesbrough, Kent, Southwark, Norfolk, Birmingham, and the Hackney Learning Trust and Tower Hamlets have been selected to take part in Trial 1.

Trial 1 will assess the effectiveness of the Numbers Count intervention by comparing the improvement made by 4 children in each school who will receive the intervention in the *Autumn term* with 8 children in each school who have *not yet* received it at Christmas (but who will receive it in the Spring or Summer term).

The 12 children selected by each school to receive Numbers Count during the school year 2009-10 will be randomly allocated by the University of York to receive Numbers Count in either Autumn 2009, Spring 2010 or Summer 2010. Some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These two changes to the normal delivery of the intervention are essential in order to ensure a robust assessment of the intervention's effectiveness.

We have invited the Headteachers and Numbers Count teachers at each of the 68 schools involved in Trial 1 to attend a conference on **Monday February 9<sup>th</sup> 2009** at the DCSF, to find out more about Trial 1. We will be presenting the design of the study in detail and outlining

the minimal changes to the way in which the intervention will need to be delivered in schools for the purposes of the evaluation. We will also be available to answer any questions.

### **What does Trial 2 involve?**

40 Schools in four Local Authority areas will be selected to take part in Trial 2.

Trial 2 will assess the impact on attainment in mathematics of the Numbers Count intervention when it is delivered *individually to one child*, and when trained Numbers Count teachers adapt their methodology to deliver an intervention to *groups of (two or three) children*. In 20 schools we will compare one-to-one delivery of the Numbers Count intervention versus one-to-two delivery of an adapted intervention; and in a further 20 schools we will compare one-to-one delivery versus one-to-three delivery of an adapted intervention.

The children selected by each school to receive an intervention during the school year 2009-10 will be randomly allocated by the University of York to receive either Numbers Count as individuals or an adapted intervention in pairs or in triplets. As in Trial 1 some additional testing of the children will be necessary, but we will work very closely with you to ensure that any additional burden on the teachers and children will be minimal. These changes to the normal delivery of Numbers Count are essential in order to ensure a robust assessment of the Numbers Count's effectiveness when delivered to individual children, compared with delivery of an adapted intervention to pairs or triplets of children.

We will be inviting the Headteachers and Numbers Count teachers at each of the 40 schools involved in Trial 2 to attend a conference to find out more about Trial 2 later in the year. Like the Trial 1 conference this will be opportunity for us to present the design of the study in detail and outline the changes to the way in which the intervention will need to be delivered in schools for the purposes of the evaluation, and provide an opportunity for questions.

### **What does the Process Evaluation involve?**

The aim of the process evaluation is to identify issues, positive and negative, about the programme. These will be fed back in a formative way to those responsible for the development and implementation of ECC, and will go on to form the basis of a research report for the DCSF. Unless specifically agreed this feedback will be anonymous. We will also look at other aspects of the process, such as the professional development and the role of local authorities.

The bulk of the research will be with 18 Schools from the Local Authority areas of Essex, Sunderland, Doncaster, Bradford, Bristol and the Hackney Learning Trust and Tower Hamlets.

The process evaluation will aim to understand how ECC is being implemented in schools, and ways in which the national programme might be improved. A number of visits will be made to schools to:

- Observe some Numbers Count sessions and how children then progress in their day to day class teaching
- Talk with Numbers Count teachers
- Talk to classroom teachers / support staff
- Talk to children
- Meet with some of the parents/carers of the children involved (possibly in a group setting)
- Talk to other staff in the school

We will be providing further information to the National Trainers and Teacher Leaders on specific elements of the evaluation at a later date. In the meantime if you have any questions please feel free to get in touch.

Yours sincerely

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

[cjt3@york.ac.uk](mailto:cjt3@york.ac.uk)

Dr. Andy Wiggins (Centre for Evaluation and Monitoring (CEM) Durham and Co-chief Investigator of the ECC evaluation)

[ecc@cem.dur.ac.uk](mailto:ecc@cem.dur.ac.uk)

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)

[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

01904 328158

Dr. Patrick Barmby (Lecturer in Mathematics School of Education Durham University)

[ecc@cem.dur.ac.uk](mailto:ecc@cem.dur.ac.uk)

**Appendix O: Consent Form for Schools PAIRS**

**Every Child Counts Independent Evaluation**

**Trial 2: Pairs**

**School Consent Form**

- I confirm that I have read and understood the summary and detailed information sheets for the above evaluation and have had the opportunity to ask questions.
  
- I understand that all the children's results will be kept confidential and that no material which could identify individual children or the school will be used in any reports of this evaluation, without my express permission.
  
- I agree that my school will take part in the above study and support it to the best of our ability.

Please write in block capitals

Name of  
Headteacher.....

School.....

Tel No.....

Email address.....

Signature of  
Headteacher.....Date.....

Thank you for agreeing to take part in this important research, please could you return this consent form to Hannah today or post it as soon as possible to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD

**Appendix P: Consent Form for Schools TRIPLETS**

**Every Child Counts Independent Evaluation**

**Trial 2: Triplets**

**School Consent Form**

- I confirm that I have read and understood the summary and detailed information sheets for the above evaluation and have had the opportunity to ask questions.
  
- I understand that all the children's results will be kept confidential and that no material which could identify individual children or the school will be used in any reports of this evaluation, without my express permission.
  
- I agree that my school will take part in the above study and support it to the best of our ability.

Please write in block capitals

Name of Headteacher.....

School.....

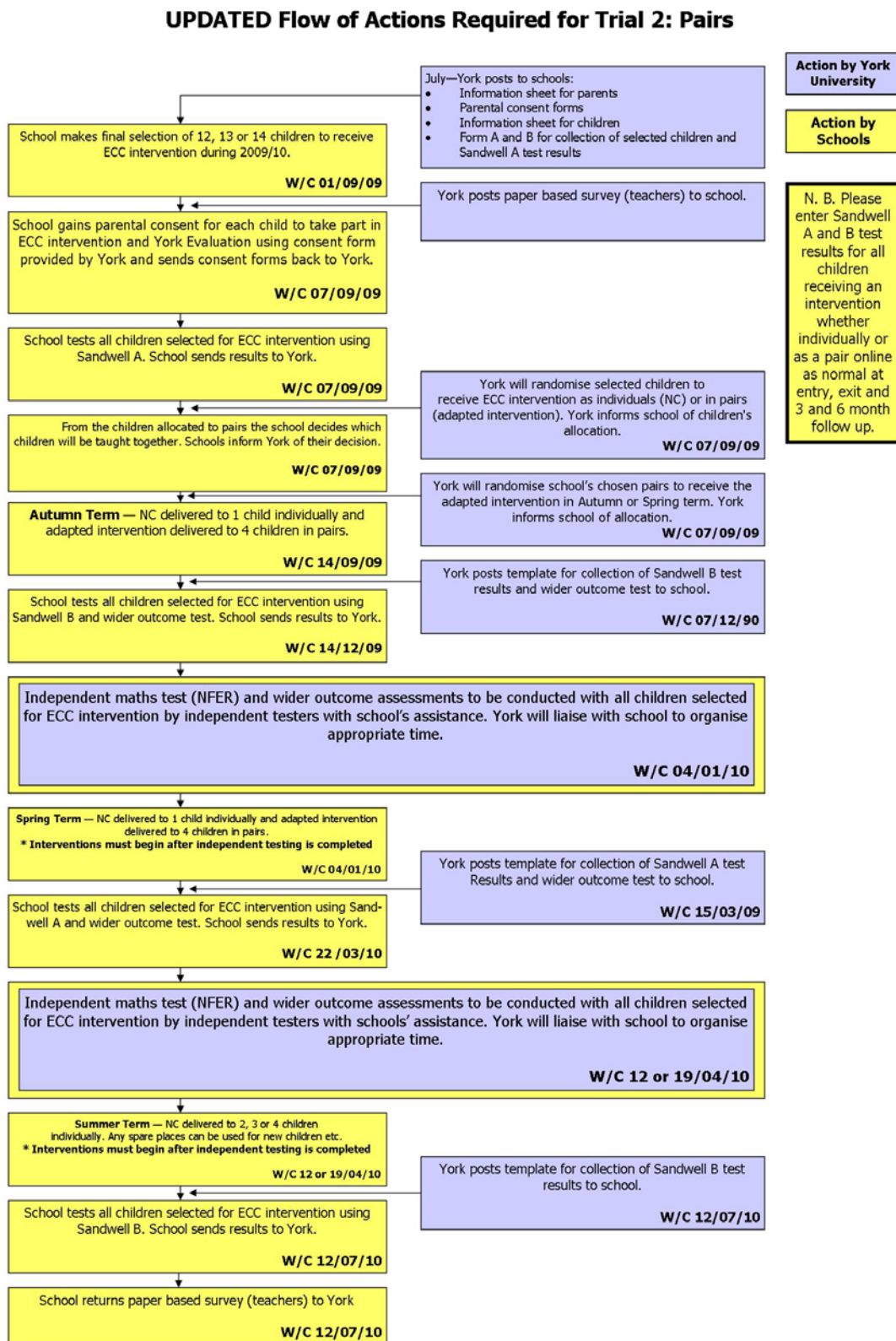
Tel No.....

Email address.....

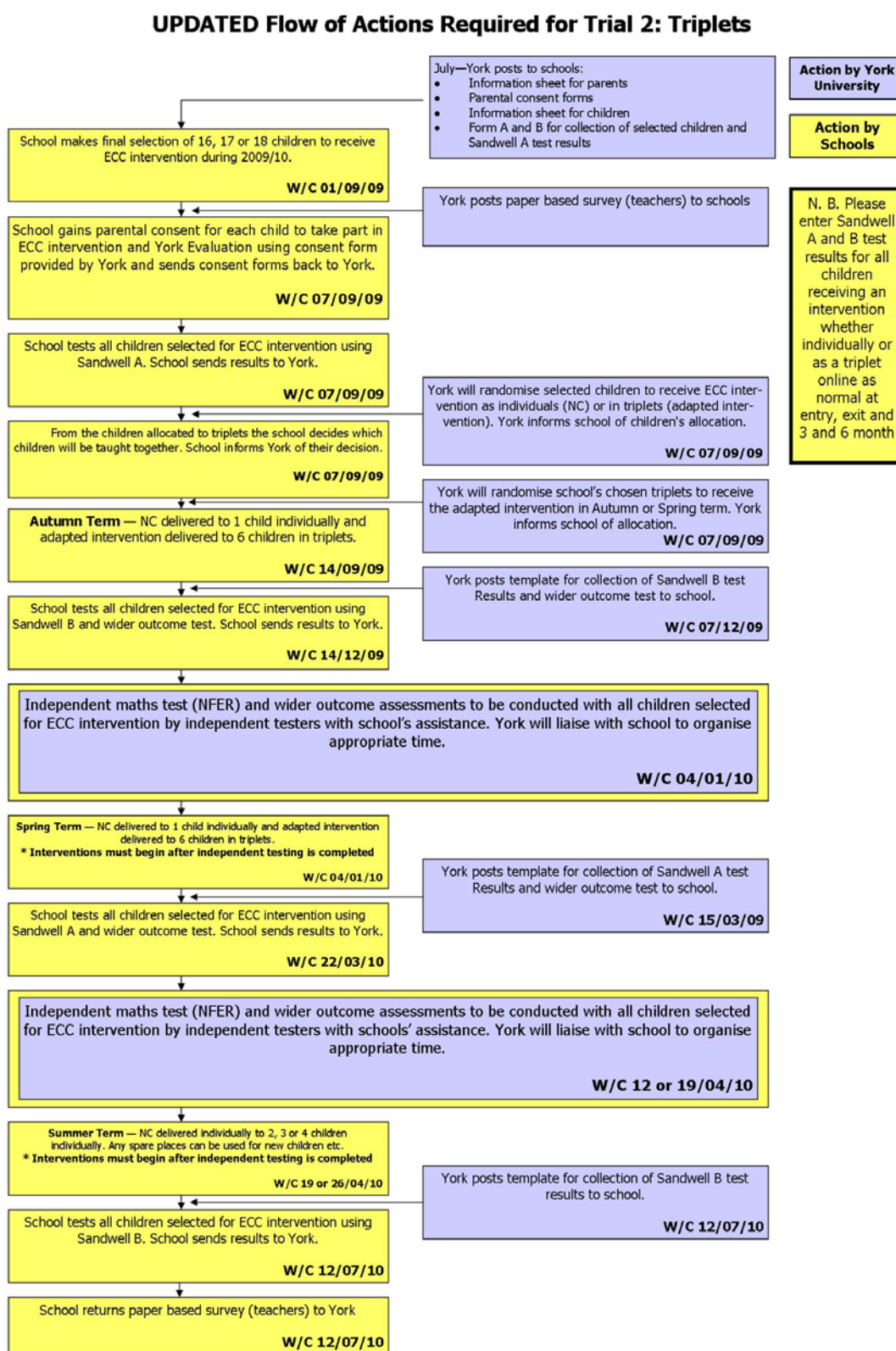
Signature of Headteacher.....Date.....

Thank you for agreeing to take part in this important research, please could you return this consent form to Hannah today or post it as soon as possible to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD

## Appendix Q: Flow of Actions Pairs

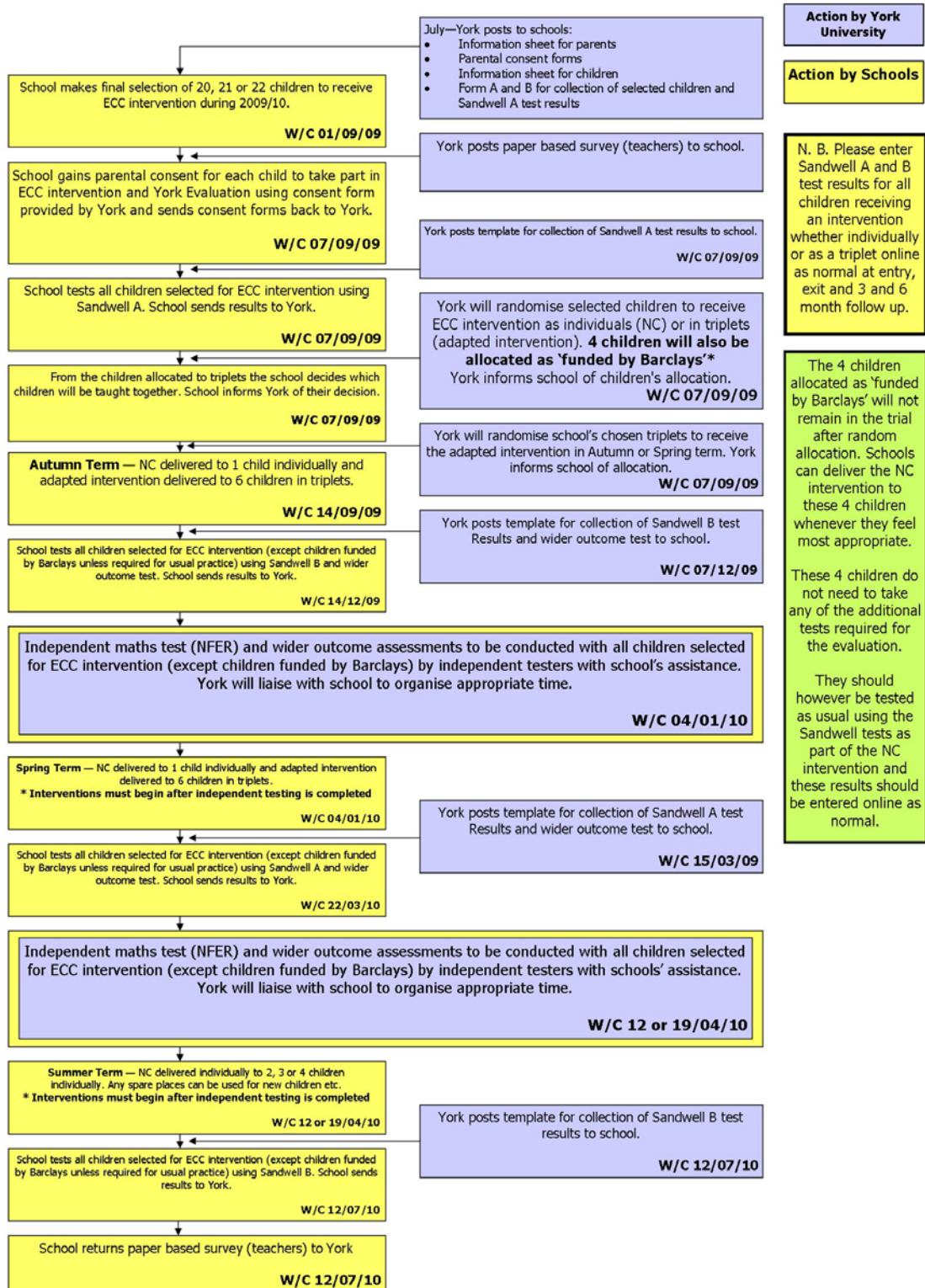


## Appendix R: Flow of Actions Triplets



## Appendix S: Flow of Actions Triplets - for Schools with Barclays Funding

### UPDATED Flow of Actions Required for Trial 2: Triplets for schools with Barclays funding





## **Appendix T: FAQs Following Trial 2 Conference**

### **Every Child Counts Evaluation: Trial 2**

#### **Information to answer frequently asked questions**

*This document should be read alongside the Teachers' Information sheet which was distributed at the Trial 2 conference. We recognise that all schools are different and we would encourage you to get in touch with us if you have any specific issues which you think may affect you taking part in the trial. The likelihood is that we can work around your specific needs. If you have any further questions please feel free to get in touch with Hannah Ainsworth.*

#### **Selection of children**

Each school should select children to take part in the evaluation using usual procedures and following the current guidance from ECC.

Children who are receiving or will receive additional interventions as part of their normal teaching – i.e. children with special needs can still be selected for the evaluation.

On the very rare occasions where a child might have already received the NC intervention during Yr1 it is the school's decision whether or not to select them for the evaluation. If the school feels it is appropriate for the child to receive an intervention again then evaluators are happy for them to be included in the trial. If you have already started teaching children in Yr1, please let us know, as we can accommodate this.

Schools can begin making their selection of children for the evaluation from now if they wish. Some schools have raised the concern that they may not have enough eligible children to select for the evaluation. If this is the case for your school please get in touch and we can make specific arrangements for your school – we can accommodate fewer numbers of children. You are also free to include some children whose attainment is just above the normal criteria for accessing the NC programme.

If your school will have two NC teachers, again please get in touch with us so we can make specific arrangements for your school. We will need to randomly allocate all of the eligible children in your school, firstly to be involved in the trial or not and then we will allocate those children involved in the trial to method of teaching, one-to-one or small group.

#### **Random Allocation**

Please note there is a two-step process for random allocation. The University of York will firstly allocate your selected children to individual or group delivery. From the children allocated to group delivery you will then be able to choose which children should be taught together. The University of York will then allocate the individual children and your chosen groups to term of delivery.

Schools must wait until they have received their allocations before beginning any intervention work, including diagnostic work.

It is crucial that schools keep to the random allocation as any change would jeopardise the quality of the evaluation. It doesn't matter if the allocation looks unbalanced within your school as over the whole sample of schools differences will even out to ensure we are comparing similar groups.

#### **Informed consent**

It is very important for ethical reasons that we receive informed consent from schools and parents.

Schools do not have to take part in the evaluation. We are aware that your involvement will result in some extra work and changes to normal practice but we hope that you will recognise the importance of the research and look forward to being involved.

The University of York will provide schools with parental information sheets and consent forms. If you need parental information sheets in other languages, please let Hannah know which languages you need and we will do our best to get translations. It is very important for the purposes of the evaluation that parents give informed consent for their child to be involved in the evaluation. If a parent refuses to give consent for their child to be included in the evaluation, we would appreciate it if schools could make every effort to explain the importance of the research and that both interventions are believed to be beneficial, however as yet we have no evidence as to which method may be the most effective. If having explained this, a parent/carer still refuses to give consent please contact the University of York for further advice. It is very important that as far as possible every child who is identified for an intervention by the school is included in the evaluation. If a parent has concerns he/she is very welcome to contact Hannah Ainsworth or Carole Torgerson at the University of York to discuss the evaluation further.

Schools can meet more than one parent at once if they feel this would be appropriate, although we advise that some parents may have questions and the meeting may be easier to conduct on a one-to-one basis. Schools can begin gaining parental consent as soon as they receive the documents from the University of York if they wish. Schools do not need to meet parents again. For instance, if a child is allocated to receive the intervention in the Summer term, a second meeting does not need to be held with parents actually in the Summer term; however, teachers may want to remind parents when their child will be receiving an intervention.

The parental consent form which will be sent to you by the University of York replaces the Home School Contract in the Numbers Count handbook. However, if you wish to video children at any point parents must give specific permission for this using the appropriate form.

## Testing

For the purposes of the evaluation *all* children selected for an ECC intervention need to be tested using the Sandwell tests at four time points during the school year 2009/10. (Sep, Jan, Apr and July) In the normal delivery of Numbers Count, Sandwell A is conducted by the Numbers Count Teacher when a child enters Numbers Count and conducted by the Link Teacher when the child exits Numbers Count. For the purposes of the evaluation, in order to spread the extra burden of testing all selected children at 4 time points during the year, the Sandwell tests can be conducted by either the Numbers Count Teacher or by the Link Teacher at any time point. A school is also able to train up a teaching assistant to conduct the Sandwell tests if they feel this would be helpful. For the purpose of the evaluation none of the Sandwell testing needs to be videoed.

The Sandwell A test is currently in use as part of the Numbers Count programme. Sandwell B is currently being developed. This test will be exactly the same in style and coverage as Sandwell A; however, the questions will be different to provide the children with variation. As soon as Sandwell B is available we will let you know.

The testing to be completed for all children does not include the diagnostic assessment; this is part of the intervention and is only conducted on the children receiving an intervention each term. Diagnostic assessment does not, therefore, have to be completed by 14.09.09. Testing of all the children selected for the evaluation using Sandwell A in September needs to be completed as quickly as possible so that the children can be randomised and then the children allocated to receive an intervention in the Autumn term can begin receiving the intervention as soon as possible to enable them to receive 12 weeks of intervention. Our apologies for the very tight time scale.

We will provide templates for the assessment results of all children to be sent to York. For Edge Hill requirements normal online data entry procedures will apply. This means that a

small amount of data will be entered twice, but we hope this will be simpler than having to remember which test results are additional to the ones required for Edge Hill. The January and April Sandwell tests can be used as exit tests for children receiving an intervention in the preceding term. The online system used for Edge Hill requirements will allow you to state whether a child has been taught individually or in a group, and allow you to enter Sandwell test results for children taught in groups. It will also allow you to enter attitude survey scores; however you do not have to conduct attitude surveys with children taught in groups unless you want to. The system will allow you to leave this section blank.

Year 3 testing for children in Infant schools should be conducted as usual, by agreement with the Junior School.

### **Group delivery**

Support for schools and NC teachers for delivering group teaching will be provided by Marie Heinst and Mary Clark ([marieheinst@googlemail.com](mailto:marieheinst@googlemail.com) and [marybj.clark@virgin.net](mailto:marybj.clark@virgin.net)). They will be in touch with you to provide brief initial written guidance, will invite NC teachers to a training day in November, and will later provide on-line support. Please do not seek support from Teacher Leaders on this issue. Your teacher leaders will continue to be available for support in teaching individual children.

NC teachers are being asked to adapt their teaching to make the sessions suitable for small groups rather than trying to teach two (or three) individual lessons in less time. Learning plans should therefore be written for the group rather than for each individual in the group. Diagnostic assessments should also be conducted for the group rather than for each individual in the group.

### **Absent children**

Pupils should still be selected for the evaluation even if they are known to have poor attendance. We will be collecting data from the National Pupil Database about attendance and will use this in our analysis. Schools do not need to ask parents about planned holidays, as this would not affect the random allocation. As this is a pragmatic trial we are interested in what the overall effect of the interventions would be in real life – and children are sometimes absent or may go on holiday during term time.

If a child from one of the small groups is ill, or is absent for any reason or leaves the school whilst the small group is receiving the intervention, if at all possible we would ask the school to replace the child with another child in order that the other children in the small group can continue to be taught in a group. The child that replaces the missing child should not be one of the children originally selected to be involved in the evaluation. Any results from this additional added child would not be included in the analysis. Schools would not need to gain parental consent if this was a short term solution. If the child replacing a child will be receiving a full 12 week intervention, the school should get normal consent from parents to be involved in ECC but *not* the evaluation.

If a child allocated to individual delivery is on long term absence or leaves the school, the school can put another child in this place, however again this child should not be one of the children originally selected for the evaluation; this is so that the random allocation can be maintained as closely as possible.

The University of York will make every effort to follow up any children who leave a school.

### **Wider Research**

The wider influence of the Numbers Count teacher may affect 'normal' class teaching in ECC schools. This is an important factor. We will not be looking at this in Trial 2 but we will be exploring this factor in other aspects of the research.

We are interested in NC teacher's views of group and individual teaching, we will ask you to fill in a short questionnaire at the beginning and the end of the trial which will ask questions

on this topic. Our colleagues at Durham University are also conducting more in-depth exploration of these questions (Process evaluation), if you would in principle be happy to be involved in this aspect of the research, please let us know and we can put you in touch with our colleagues at Durham University, who would like to interview NC teachers and head teachers and observe some lessons.

## Other Questions

**Wider impact role during summer term. Is there a clear design for this or is this a school based decision?**

There will be no prescribed advice for wider impact work in the Summer term, schools and NC teachers should use this time as they choose. Examples of good practice in wider impact work will be published by the Every Child a Chance Trust in their annual report on ECC this autumn.

**What happens in terms of paperwork for Barclays children or those being taught in the final term?**

Schools should follow usual procedures for NC for children receiving Numbers Count funded by Barclays after random allocation. Children taught in the summer term should be followed up as usual as exit, 3 and 6 month follow up as advised by ECC/Edge Hill University.

**Do teacher leaders only observe individual lessons?**

Teacher Leaders only need to observe individual lessons.

**Do we have to commit to 3 terms or 2?**

Schools need to be able to commit to the whole of the evaluation for the year 2009/2010. However as we have already noted, if you do not think you will have enough eligible children or you have other issues which you think may effect your involvement, please get in touch and we can see how we can work around your specific needs.

**The network of ECC teachers is very helpful: what if there are no neighbouring schools in the groups approach?**

Schools have noted that the network of ECC teachers is useful, if there are no other schools involved in the trial in your area we can put you in touch with other schools who are involved in Trial 2.

*Thank you for all your excellent questions. If at any time during the year, you have other questions about the evaluation, please do not hesitate to contact Hannah Ainsworth or Carole Torgerson. If you have any questions about the normal delivery of Numbers Count please contact your Teacher Leader or National Trainers at Edge Hill University. If you have any questions about group delivery please contact Marie Heinst and Mary Clark.*

## Appendix 2: Ethics Submission

# THE UNIVERSITY *of York*

## Humanities and Social Sciences Ethics Committee

### SUBMISSION FORM

*Please refer to the Guidance Notes at the end before filling in this form*

**NB** If you are collecting data from NHS patients or staff, you will need to apply for approval through NRES (National Research Ethics Service) at <http://www.nres.npsa.nhs.uk/applicants> (formally COREC- the Central Office for Research Ethics Committees). Please fill in the NRES form NOT this one and send your completed NRES form to HSSEC.

**1. Please provide the following details about the principal investigator.**

|                         |   |
|-------------------------|---|
| Name                    | Carole Torgerson (PI and contractual contact) |
| Post                    | Reader  |
| Qualifications          | BA, MLitt, EdD                                |
| Organisation            | IEE, University of York                       |
| Address of Organisation | ARRC, Alcuin, Heslington, York                |
| Email                   | cjt3@york.ac.uk                               |
| Telephone               | 328152  |

**2. If the research is being undertaken as part of an educational course, please provide the following details.**

|   |  |
|---|--|
| Name and level of course/degree               |  |
| Name and address of educational establishment |  |
| Name and contact details of supervisor        |  |

**3. Please list any other key collaborators or key members of the research team.**

|                         |                                   |
|-------------------------|-----------------------------------|
| Name                    | Andy Wiggins (joint co-applicant) |
| Post                    | Project Manager                   |
| Qualifications          | PhD                               |
| Organisation            | Durham University                 |
| Address of Organisation |                                   |
| Email                   | andy.wiggins@durham.ac.uk         |
| Telephone               |                                   |

**4. Please state the full title of the research.**

National Evaluation of Every Child Counts

**5. Please state source of any funding for the research.**

DCSF

**6. Are any ethical concerns / conflicts of interest likely to arise as a consequence of funding source (with respect to your own work or that of other individuals/departments within in the University).**

No

**7. Please explain the principal research question addressed by the research.**

The principal research question addressed by the research is to evaluate the impact and delivery of Every Child Counts (ECC), an intensive support intervention for the lowest attaining children in mathematics in Key Stage 1 (KS1), during its development phase in academic years 08/09 and 09/10. The evaluation will:

- provide robust impact data (including value for money assessments) to assess the effectiveness of the programme for improving children's attainment in mathematics; and
- provide formative feedback on the delivery of the development phase during the course of the evaluation, to inform future development of the intervention, associated training, and leadership and management of the programme.

**8. Please explain secondary research questions and objectives addressed by the research.**

The secondary research questions and objectives are as follows:

- To assess the impact of intensive one-to-one teacher support on children's progress and attainment in mathematics, as an immediate outcome of the intervention, and in terms of attainment at the end of KS1.
- To assess the impact on children's progress and attainment and relative value for money of intensive support teaching in small groups versus a one-to-one model, as an immediate outcome of the intervention and in terms of attainment at the end of KS1.
- To assess the impact of the intervention on children's attitudes to learning in general, particularly mathematics learning, as well as their self-confidence, attendance and behaviour in class.
- To identify key features of the effective implementation of the programme, with a focus on the training and support provided to Teacher Leaders, teachers and teaching assistants, and the leadership and management of the work at all levels.
- To identify challenges to effective implementation of the programme in schools and local authorities, and how the national Every Child Counts partnership, local authorities and schools can overcome them.
- To identify the key features of the effective implementation of a small group intervention model.
- To identify the key elements that make intensive support teaching itself effective, both over the course of the intervention and in relation to whether children maintain the gains they have made once the intervention is over.
- To identify the key factors which enable the teachers trained to deliver Every Child Counts to have a wider impact of learning, teaching and mathematics standards in their schools.

**9. Please explain the scientific justification for the research, including relevant background, explaining why it is an area of importance.**

### ***Background and rationale for the research***

The relative improvement of primary mathematics teaching is widely accepted and to be applauded, with the number of 11 year-olds gaining level 4 and above at Key Stage 2 having risen from 59% percent in 1998 to the current figure of over 77%. However, the picture for low achieving pupils is rather bleak and of widespread concern. Since 1998 the number of children failing to achieve level 3 has remained at about 6% - i.e. whilst the majority of children have improved, the lowest performing children have remained at much the same level.

There are many harmful consequences of low attainment in maths, both in the short term, for example, not being able to access many areas of the curriculum (as well as maths itself) and the potential negative social consequences; and in the longer term, difficulties at secondary school and into adulthood, as well as limitations in terms of the skills of the UK workforce. Indeed, a slightly higher proportion than the 5% of low attaining pupils at KS1 go on to leave secondary education with no qualification in mathematics.

It is widely agreed that a child who is having significant difficulties at an early stage (i.e. KS1) is likely to under-achieve in mathematics throughout their school life, and beyond. To help address these problems the Primary National Strategy (PNS) introduced the three wave model of intervention, with the lowest performing (wave 3) children receiving personalised and individual remedial teaching.

More recently the Every Child Counts (ECC) initiative has been developed by a partnership consisting of a coalition of business partners and charitable trusts (the Every Child a Chance charity) and the Government. Every Child Counts has two main aims – developing and supporting wave 3 interventions for the bottom 5% of KS1 children, and supporting less intensive (Teaching Assistant led) interventions for the bottom 5-10% group.

Following a research phase, from which the findings are due to be reported soon (along with the Williams review) the initiative is about to move in to the development phase. This will continue up to 2010, with then a roll-out stage which will target the intervention at 30,000 children.

Every Child Counts provides an intensive one to one intervention for those children identified as low achievers (the bottom 5%). In practice it aims to raise their level of performance so that they achieve level 2B (or better) by the end of KS1 – in effect putting them on a par with their peers, and then able to continue to progress in maths in the normal mainstream class setting. The model for the 5-10% group is currently being investigated, as are options as to how the intervention can be delivered in small group settings.

There are two over-arching aims to this research:

- To provide robust impact data to assess the effectiveness of the Every Child Counts programme on improving children's attainment in mathematics - **Impact evaluations:**
- To provide formative feedback on the delivery of the development phase during the course of the evaluation, to inform future development of the intervention, associated training, and leadership and management of the programme **Process evaluations.**

The first (impact) aim will be met by way of two randomised controlled trials (RCTs) in Yr 2, preceded by and followed by secondary data analyses using the National Pupil Database (NPD) in Yr 1 and Yr 2. The second (process) aim will be met by an on-going programme of qualitative research which along with the findings from the impact evaluation will be used as the basis for the formative feedback. Finally a series of expert reviews will be produced so as to provide an overview of the Every Child Counts programme and to place it in the wider



educational context.

**PLEASE NOT THIS APPLICATION REFERS ONLY TO TRIAL 1 AND THE PROCESS EVALUATION. A SEPARATE APPLICATION WILL BE MADE FOR TRIAL 2 AND THE SECONDARY DATA ANALYSES IN MARCH 2009.**

**10. If the research has been done before, please explain why it should be repeated.**

N/A

**11. Please show how existing relevant evidence, especially systematic reviews, have been fully considered, for example by giving details of any search strategies that have been undertaken.**

N/A

**12. Please provide a brief summary of the method(s) of the research making clear what will happen to research participants, how many times and in what order.**

***Impact evaluation***

We have proposed four main parts to our approach:

***Part one***

***Yr 1 (2008-9) secondary data analyses***

The secondary analyses in Yr 1 will involve a comparison phase using national data and employing two designs: interrupted time series (ITS) design and case control design (CC). These analyses will use data from all of the intervention children in the Every Child Counts 2008-9 cohort schools, historical data from pupils in the same schools derived from the National Pupil Database and PLASC. We will assess the impact of one-to-one delivery of the Every Child Counts intervention compared with non treated controls using KS1 outcomes.

***Yr 2 (2009-10) secondary data analyses***

Further secondary analyses will be undertaken in Yr 2 of the evaluation which will employ the same designs as the analyses above (Yr 1) and these will help to provide data on the broader and longer term impact of the intervention.

***Parts two and three***

***The Trials (Yr 2 2009-10)*** – we have planned to undertake two separate stand alone trials to assess the impact of the programme, both at a policy level and in terms of the effect on different groups of children. We will also assess the impact of different delivery models.

***Part two***

***Trial 1*** will involve a focused impact/sustainability phase using an RCT design, and will include approximately 600 children from 50 schools. This will be an individually randomised trial using a wait list design. The focus will be to assess the impact of one-to-one delivery of the Every Child Counts intervention. We will also look at the relative effectiveness for the children of receiving the intervention in the first, second or third terms of the year, and we will look at the durability of the impact of the intervention (in terms of the outcomes at the end of the year by comparing the mean values for children receiving the intervention in the first term with the mean values for children receiving the intervention in the second and third terms). We will also assess the wider impact of the intervention by analysing the outcomes of the children in this cohort relative to their classmates (see wider impact – quantitative component).

**Part three**

**Trial 2** will be an impact/implementation study to assess the relative impact of the Every Child Counts intervention delivered using the one-to-one approach compared with group delivery to pairs of children or groups of three children, and will involve 40 schools. We will assess the range of impact of the intervention in terms of one-to-one delivery compared with delivery in groups of pupils (twos or threes) using an individually randomised controlled trial design.

**Part four**

**Process evaluation** – we will use a variety of interview and survey techniques, and the findings (augmented with the findings from the impact evaluations) will be used to provide ongoing formative feedback to the Every Child Counts project management throughout the project period. It will focus on training, teaching and organisational issues.

**Expert reviews** – these will draw together the findings from the trials and the formative feedback, as well as other existing and on-going research. These reviews will also help disseminate the findings through being a part of the final evaluation report.

**AS ABOVE - PLEASE NOTE THIS ETHICS SUBMISSION SEEKS APPROVAL FOR PARTS TWO AND FOUR ONLY (TRIAL 1 AND PROCESS EVALUATION). I WILL SUBMIT A SEPARATE APPLICATION FOR PARTS ONE AND THREE IN MARCH 2009.**

**13. Please describe your statistical (or equivalent) methods employed to analyse your results, including details of the randomisation process to be used, if applicable.**

Trial 1: See Trial 1 Protocol (attached) page 7

**STATISTICAL ANALYSIS**

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation. The primary outcome is the Sandwell test. The difference between the intervention group and the control group will be compared. We will undertake a regression analysis with the dependent variable as the post-test. As well as group allocation we will also include pre-test, age and gender as explanatory variables. School will also be included in the regression models. This is because the children will be clustered by school and there is a possibility that there may be a 'teacher effect'. The anonymity of all schools, children and teachers will be preserved for all analyses and there will be no presentation or comparison of the results from individual schools or teachers. Subgroup analyses are planned to assess the effectiveness of the intervention for children with different learner characteristics (EAL, gender etc).

**14. For quantitative studies, please state the primary outcome measure for the study. For qualitative studies, please state the main outcome the study is aiming to produce.**

Primary outcome measure for quantitative evaluation: Performance on Sandwell mathematics test.

Primary outcome measure for qualitative evaluation: Identification of key elements of effective implementation of the intervention.

**15. For quantitative studies, please state any secondary outcome measures for the study. For qualitative studies, please state any other outcomes the study is aiming to produce.**

Secondary outcome measure for quantitative evaluation: Performance on the WRAT-4 mathematics computation subtest' performance at Key Stage 1 (teacher assessments) and KS2 (teacher assessments)

**16. If the size of the study has been informed by a formal statistical power calculation, please indicate the basis on which this was done, giving sufficient information to allow replication of the calculation.**

Trial 1: See Trial Protocol (attached) page 5-6

*Sample size and power* – In our experience most randomised trials of educational interventions are usually not large enough to identify small but policy important differences. The sample size in the trial will give us good statistical power to identify small but important differences in outcomes, including being able to do various sub-group analyses. In our sample size calculations below we describe the power of 95%, which means that for any given hypothesized difference we will have approximately a 9.5 in 10 chance of showing this. We think, however, that this is conservative and that our actual power will exceed this. We also describe our outcome differences in effect sizes, which essentially means that we will be looking for a difference in mean test scores between the groups divided by the group standard deviation. The effect sizes powered by the sample will enable us to detect an effect size of at least 0.25 for the trial. In addition, we intend to undertake a number of subgroup analyses. Therefore we need to ensure that all trials will be sufficiently powered to support this.

Note that, even small effects may be worthwhile, however. For example, a relatively small effect size of 0.10 means that for a test that has a pass score of 50% then 4% more children will pass this threshold. Although this seems a small proportion translated to a national annual school population this will translate into around 20,000 more children passing a maths threshold. Another way of looking at this impact is that for a class of 25 children this would mean the intervention results in one more child passing a maths threshold. An effect size of 0.20 implies roughly that 8% more children will pass a given threshold or 40,000 children nationally, whilst an effect size of 0.32 is about 14% more children.

**17. If you have consulted a statistician, please provide their name, post and contact details.**

Professor Martin Bland, consultant statistician on evaluation (co-applicant)

Dr Catherine Hewitt, evaluation statistician (funded for 20 days per year for two years)

**18. Please describe any ethical problems likely to arise with the proposed study, and explain what steps you will take to address them.**

Consent is the only likely problem to arise and risk is estimated to be low. The Trial 1 schools receive extra funding and the expectation is that they will participate in the trial because of the extra funding – there are minimal changes to the normal implementation of the intervention as a result of the evaluation (see Trial 1 Protocol). The process evaluation schools can decline to take part, participation is voluntary and with full informed consent of all parties involved.

**19. Please explain how research participants will be (a) identified (b) approached and (c) recruited.**

Impact evaluation: Trial 1

Identification: Schools from LAs which receive extra funding - voluntary

Approached: Invited to Trial 1 conference at Westminster DCSF hosted by Jim Knight Schools Minister

Recruited: At conference February 2009

Process evaluation

Identification: The LAs have been identified by the ECC steering group in a way which avoids those schools which are taking part in the RCTs.

Approached: Three schools from each of the LAs have been chosen at random as our first choice. If any choose not to opt in others from that LA will be invited to participate. Approached by letter.

Recruited: During January and February 2009

**20. Please give details of inclusion and exclusion criteria.**

Please see above

**21. If research participants are to receive any payments for taking part in the research, please give details, indicating how much they will receive and the basis on which this was decided.**

Schools *may* receive a book token to recognise the small amount of additional testing for the wider outcomes depending on resources available. Amount has still to be determined but is likely to be less than £50

**22. If research participants are to receive reimbursement of expenses, or any other incentives or benefits for taking part in your research, please give details, indicating what and how much they will receive and the basis on which this was decided.**

N/A

**23. Please indicate whether any research participants will be from the following groups; if so, please explain the justification for their inclusion.**

|  |          |
|--|----------|
| NHS staff  | No       |
| Children under 18  | Yes      |
| Those with learning disability                                     | Possibly |
| Those who are unconscious, severely ill or have a terminal illness | No       |

|  |    |
|--|----|
| Those in emergency situations  | No |
| Those with mental illness (particularly if detained under Mental Health Legislation)   | No |
| Those suffering from dementia  | No |
| Prisoners  | No |
| Young offenders  | No |
| Adults who are unable to consent for themselves  | No |
| Those who could be considered to have a particularly dependent relationship with the investigator, e.g. those in care homes, medical or other students | No |
| Other vulnerable groups (please specify)   | No |

**24. During your study, will anyone discuss sensitive, embarrassing or upsetting topics, or issues likely to disclose information requiring further action (such as the implementation of a screening test for drug abuse)? If so, please give details of the procedures in place to deal with these issues.**

N/A No-one will discuss anything other than the ECC intervention and this is not deemed to be sensitive, embarrassing or upsetting (see Process Evaluation Protocol)

**25. If the research involves deception of any kind, please explain and justify the deception.**

N/A

**26. Please list and justify potential adverse effects, risks or hazards for participants.**

N/A

**27. Please explain and justify any discomfort, distress, pain or inconvenience that the study might cause participants, including details of any procedures in place to deal with these issues.**

N/A During the pupil interviews in the Process Evaluation the pupils can discontinue at any time. The teacher will be present throughout all interviews.

**28. Please describe the potential benefits to participants.**

The schools will benefit from being part of a national evaluation which will enable the researchers to estimate the effects of a national rollout programme.

**29. If the research requires that any intervention or procedure that is normally considered part of their routine care is to be withheld from participants, please provide details and a justification.**

Trial 1

N/A No child who would normally be eligible to receive the intervention will have it withheld – Trial 1 uses a wait list design for this reason. All eligible children (as determined by the teachers at the schools) will receive the intervention – they will be randomised to receive it in the first, second or third term.

Process evaluation

N/A

**30. Will participants, as a result of the research, receive any intervention or procedures that would not be considered part of their routine care? If so, please give details, including describing in detail the intervention or procedure in question.**

N/A The intervention is going to be rolled out nationally to all eligible children.

**31. Please list and justify potential adverse effects, risks or hazards, pain, discomfort, distress or inconvenience that the study might cause researchers.**

N/A

**32. Please explain how voluntary informed consent to participate will be elicited from participants. If different groups are involved in the study (e.g. parents, children, staff), please describe the sequence of consent.**

Trial 1 – LAs and schools are expected to participate as they receive extra funding. Voluntary informed consent from parents for participation in both the intervention and the evaluation takes part once a child has been identified and is managed by the school who has a discussion with the parents. If parents consent to their child receiving the intervention the child cannot refuse the evaluation but will have the evaluation explained to them by the teacher. For detailed procedures and all forms (Information Sheets and Consent Forms) see Trial 1 Protocol Appendices (attached)

Process – LAs, schools, Headteachers and teachers volunteer to participate – it is voluntary and informed written consent is required. For detailed procedures and all forms (Information Sheets and Consent Forms) see Process Evaluation Protocol Appendices (attached) . Parents receive an Information sheet and give assent by opt-out option. Children receive Information Sheet and discussion and can opt out at any time.

**33. If you do not envisage obtaining a signed record of consent from participants, please justify.**

N/A

**34. If you do not envisage providing participants with a written information sheet about your study, please justify.**

N/A

**35. Please explain what arrangements have been made to explain the research to participants who do not understand English well.**

The Trial Co-ordinator will liaise with the teachers in all schools to ensure that the schools' existing resources for dealing with explaining the intervention to parents or pupils who do not understand English well can be used to explain the evaluation to them.

**36. If the research will involve any of the following activities please indicate so and provide further details.**

|  |  |
|--|--|
| Examination of medical, educational or social care records by those outside the NHS or relevant service, or within the NHS or relevant service by those who would not normally have access | No   |
| Transfer of data by floppy disc  | No   |
| Electronic transfer of data by CD, tape, or equivalent   | No   |
| Transfer of data by ftp or via web sites   | No   |
| Sharing of data with other organisations   | Between York and Durham only – we have detailed data protection procedures – see attached document |
| Export of data outside the European Union  | No   |
| Use of personal addresses, postcodes, faxes, emails or telephone numbers   | See attached data protection document  |
| Publication of direct quotations from respondents  | Process evaluation: Yes, permission will be sought and no actual names will be used                |
| Publication of data that might allow identification of individuals   | No   |
| Use of audio/visual recording devices  | Process evaluation: Yes, permission will be sought in advance.                                     |

**37. If the research will involve storing personal data, including sensitive data, on any one of the following please indicate so and provide further details.**

|                                       |  |
|---------------------------------------|--|
| Manual files                          | Yes, two locked barriers – see attached data protection document |
| NHS or other public service computers | No   |

|                                  |  |
|----------------------------------|--|
| University computers             | Yes, password protected folder in shared file with access by team only – see attached data protection document |
| Private company computers        | No   |
| Home or other personal computers | Yes, with permission of PI only and password protected – see attached data protection document                 |
| Laptop computers                 | Yes, as above – see attached data protection document  |
| Websites                         | No   |

**38. Please explain the measures in place to ensure data confidentiality, including details of encryption or other methods of anonymisation.**

See attached data protection document

**39. Please detail all who will have access to the data generated by the study.**

Carole Torgerson, Hannah Ainsworth, Andy Wiggins, Patrick Barmby, David Torgerson, Martin Bland, Charles Hulme, Vivien Hendry, Catherine Hewitt

**40. Please detail who will have control of, and act as custodian(s) for, data generated by the study.**

At York Carole Torgerson and Hannah Ainsworth  
At Durham Andy Wiggins and Patrick Barmby

**41. Please explain where, and by whom, data will be analysed.**

Analysis of Trial 1 will be by Carole Torgerson, Catherine Hewitt, David Torgerson and Martin Bland  
Analysis of Process Evaluation will be by Andy Wiggins and Patrick Barmby

**42. Please give details of data storage arrangements, including where data will be stored, how long for, and in what form.**

Please see data protection document

**43. If data protection officers are aware of your study, please give details.**

Data protection officers at DCSF have approved our data protection document

**44. Please indicate whether your results will be reported and disseminated in any of the following ways, giving any relevant details.**



|  |  |
|--|--|
| Peer reviewed scientific journals  | Yes                                      |
| Internal report  | Yes                                      |
| Conference presentation  | Yes                                      |
| Other publication  | No                                       |
| Submission for academic assessment   | No                                       |
| Submission to regulatory authorities   | No                                       |
| Access to raw data and right to publish freely by all investigators in study | No – agreed publication plan in Protocol |
| By an Independent Steering Committee on behalf of investigators              | No                                       |
| Other (e.g., Cochrane Review, University Library)                            | No                                       |

**45. If results are not to be reported and disseminated in any of the above ways please explain how they will be reported and disseminated.**

Technical report and summary to funder

**46. Please explain how results will be made available to participants and the communities from which they are drawn.**

Conference to disseminate results.  
Letter to schools, pupils and parents containing summary of results.

47. If the Principal Investigator or any other key investigators or collaborators have any direct personal involvement in the organisation sponsoring or funding the research that may give rise to a possible conflict of interest, please supply details.

N/A

48. If individual researchers are to receive any personal payment over and above their normal salary for taking part in this research, please supply details.

N/A

49. Please explain any arrangements that have been made to provide indemnity and/or compensation in the event of a claim by, or on behalf of, participants for negligent harm.

University of York employer indemnity  
Durham University employer indemnity

50. Please explain any arrangements that have been made to provide indemnity and/or compensation in the event of a claim by, or on behalf of, participants for non-negligent harm.

University of York employer indemnity  
Durham University employer indemnity

**51. Finally, please list any potential risks to the researcher(s) employed on the project, including details of procedures to deal with any such risks.**

None envisaged

**For other applications, please complete:**

Signature of Principal Investigator:

*Carole Torgerson*

Signature of Head of Department:

Date of Completion:

070108

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## **Appendix 3: Data Protection Procedures**

The level of security necessary for this evaluation is '**RESTRICTED**'. This is because it is an evaluation of a sensitive policy intervention, and involves individual case details in the Secondary Analyses and Trials 1 and 2. Compromise of data collected and analysed in the evaluation could disadvantage the government in policy development, or could cause distress to individuals.

Below we provide a detailed general statement on our data security policy during data collection and analysis and arrangements for the safe and secure transfer of data. In addition we provide detailed specific arrangements for the three phases of the evaluation, including details of in-house security at both Durham and York. These measures will ensure that we comply with the Data Protection Act 1998.

### **Detailed general statement**

The University of York and Durham University shall observe their obligations under the Data Protection Act 1998 and shall comply at all times with the Act.

All hard and electronic data will be marked 'Restricted'. We will store all hard data at York and Durham protected by at least two barriers within a secure building (locked filing cabinet or container within locked office in secure building). When we dispose of the hard data we will either shred within the office or dispose through the waste disposal bags marked 'confidential disposal'. All electronic data will be stored on restricted access/password protected files. Access will be restricted to members of the evaluation team (4 core members plus statistician and economist). When we dispose of electronic data we will delete all copies including data stored on USBs. If we need to transfer the data internally at either institution we will do so by e-mail or in double sealed envelopes; if we need to transfer data between the two institutions we will do so either by e-mail or by special delivery or secure courier. Discussions about the restricted data will always take place face-to-face and not on the telephone. Data will not be faxed. If any of the core team members or statistician or economist works from home or when travelling this will only be permitted with one of the lead applicants' permission, and compliance with all measures above will be required. Photocopying will be permitted, but this will be restricted to essential copies only and circulation will be restricted.

### **Detailed specific arrangements**

#### **Secondary Analyses**

This will involve:

Data on individual pupils obtained from the National Pupil Database. The data may include some or all of the following: amended or final versions of PLASC/census data; KS1 results, KS2 results, FS results.

Collection and analysis of these data will comply with fair processing principles. Data will be received at the University of York by the PI and will be restricted to members of the core team and statistician and economist working on the project. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.).

#### **Trials 1 and 2**

This will involve:

Recruitment of schools, randomisation of pupils, data collection (Sandwell Test results A and B pre-, post, and follow-up tests, KS2 data), data analysis for Trials 1 and 2 (overall mean effect sizes with confidence intervals; sub-group analyses) and economic evaluation.

A copy of the York Trials Unit Standard Operating Procedures is included as an Appendix. All recruitment, randomisation, data collection and data analysis procedures during the trial phase of the evaluation as outlined in this document will be followed. All measures as described above in the general statement will be followed. In all reports to the funder (DCSF) and in all publications no individual pupils will be identified using personal details (names etc.).

In addition, informed, positive consent will be obtained from all participants using an opt-in clause in the consent document relating to participation in the intervention. An information sheet will also be given to all participant children, teachers and headteachers which will outline the purpose(s) for which we are gathering or processing their data, who will hold it, if it will be disclosed to anyone, how long it will be retained etc and what will happen to it.

### **Process evaluation: Fieldwork notes (and contact details)**

This will involve:

- Lesson / Classroom observations
- Teacher training observations / interviews
- Teacher and other school staff interviews
- Local Authority Officer interviews
- Training Provider Interviews
- Every Child Counts management interviews

**No identifiable data will be collected for any children.** Identifiable data in the form of names and contact details (address and telephone number) will be used throughout the project for adults who agree to contribute to the research (note: informed written consent will be sought and obtained from all participant adults.) Identifiable data will be in written and computer form. All details will be destroyed 6 months after completion of the project. Those details (written or computer) will be kept personally and exchanged between the two Durham researchers.

Field notes made during the course of the research will identify the name of the school and where appropriate relevant staff. **Children's names (or indefinable data) will not be collected.** Notes will be made in handwritten or computer form, and electronic recordings of interviews will only be made if specific agreement is given by all of the people involved.

Electronic data (including any sound recordings) will be stored on access protected personal computers and only authorised Durham or York staff will have access (4 core team members AW, PB, CT and HA). Backups will be made on secure servers at Durham and York. Written notes will be stored when not in use in locked filing cabinets. Generally these will be copied to computer files, after which the notes will be destroyed. Any hand written notes not

transferred will be destroyed six months after the end of the project. Electronic data will be retained on the secure servers at Durham and York indefinitely.

Carole Torgerson and Andy Wiggins

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## **Appendix 4: Trial 2 Analysis Plan**

### **Every Child Counts Evaluation**

#### **Trial 2: Pairs Analysis Plan**

(Note: Operational Group approval received 21/01/10)

The primary analysis will use the intention to treat principle. Consequently any children who cross over from either study arm will be analysed as per their randomisation allocation.

#### **Primary analysis**

The primary outcome is the GL assessment 6. This is the most robust analysis because the outcome measure will be undertaken and marked blind to group allocation by independent testers, and because the sample size (15 schools) is sufficient to show an effect size difference of 0.55 between the two groups. We will use  $p = 0.05$  to indicate statistical significance for the primary analysis. The difference between the test mean of the one-to-one group and the test mean of the pairs group will be compared. We will undertake a regression analysis with GL assessment 6 as the dependent variable. Explanatory variables for the interim analysis will be: group allocation; Sandwell A test result; school; age of child; gender. Explanatory variables for the final analysis will be: group allocation; Sandwell A test result; school; age of child; gender; FSM status; SEN status. The analysis will compare the performance of children who are randomised to one-to-one delivery with the performance of children who are randomised to delivery of an adapted intervention in pairs. The GL assessment 6 will be administered to all children in the Trial at the start of the Spring Term (January 2010), and at the start of the Summer Term (April 2010). Tests will be marked by independent markers who are blind to the treatment allocation. We will produce 95% confidence intervals of the difference between the groups and a  $p$  value of 0.05 will indicate statistical significance. We will also compare the first cohort to the second cohort on the January and April assessments using the primary outcome measure to compare delivery of the intervention in Autumn and Spring terms to see if there is any difference depending on term of delivery.

In addition we will undertake an analysis comparing the outcomes for one-to-one delivery with the outcomes for the untreated controls and outcomes for delivery to pairs with the outcomes for the untreated controls. We will run these analyses for both primary outcomes (January and April).

#### **Economic Evaluation**

An economic evaluation will also be undertaken. See separate document.

#### **Secondary analyses**

For the secondary outcome we will look at the impact of NC on Sandwell B test (December) and Sandwell A test (April) controlling for the same co-variables outlined above (i.e., Group; Sandwell A test; school; age; gender). We will also compare the first cohort to the second cohort on the April assessment using the secondary outcome measure. By comparing the first to the second cohort at that time we will check to see whether, in fact, there is any difference depending on term of delivery.

#### **Exploratory analyses**

In addition, for the main outcome we will look for interactions between baseline test score, age and gender (i.e., do children respond any differently to NC or an adapted intervention delivered in pairs based upon their pre-test scores, age or gender?) and number of Numbers Count lessons attended; we will also explore interactions between main outcome and status of Numbers Count teacher (i.e. Deputy Head, Assistant Head, NC teacher, and highest educational achievement of NC teacher), FSM status and SEN status.

To reduce the problems of multiple testing we will use  $p = 0.01$  to indicate statistical significance for all secondary and exploratory analyses. Note: the secondary outcomes are susceptible to bias because the tests will be undertaken by persons not blind to group allocation.

#### *Wider impact (quantitative assessment)*

We will measure the following variables in January in order to assess the wider impact of the intervention:

- (d) Attention/behaviour/mental health (SDQ Goodman teacher/parent scale);
- (e) Attitudes to mathematics, literacy and school (PIPS);

For the wider impact assessments we will compare the mean score for the one-to-pairs/triplets group with the mean score for the one-to-one group.

#### **Trial 2: Triplets Analysis Plan**

All analyses for Trial 2 Triplets will be exploratory due to the limited sample size (7 schools). We will undertake all analyses as above for Trial 2: Pairs. All results will be treated with caution due to the small sample size.

#### **Trial 2: Meta-analysis**

We will combine all effect sizes for Trial 2 in order to compare the difference in outcome between one-to-one delivery of NC with an adapted small group intervention (pairs or triplets).

## Appendix 5: Economic Analysis Protocol

### Protocol for Economic Evaluation of Every Child Counts

In addition to understanding the effectiveness of an intervention, it is very important to include a trial-based economic evaluation to investigate the cost effectiveness of the ECC intervention. In particular, this evaluation will inform decision-makers of whether group or individual Every Child Counts (ECC) is the most cost-effective policy when compared with usual teaching. The trials are described elsewhere but essentially comprise 3 comparisons of different levels of intensity of ECC, as well as usual teaching. The trials will assess the effectiveness of:

- (1) usual teaching in mathematics
- (2) usual teaching in mathematics plus ECC delivered to single children
- (3) usual teaching in mathematics plus ECC delivered in pairs
- (4) usual teaching in mathematics plus ECC delivered in triplets

Trial-based evaluations are being conducted for each of these, to assess the relative effectiveness of different modes of delivery of the intervention. These are illustrated in the figure below.

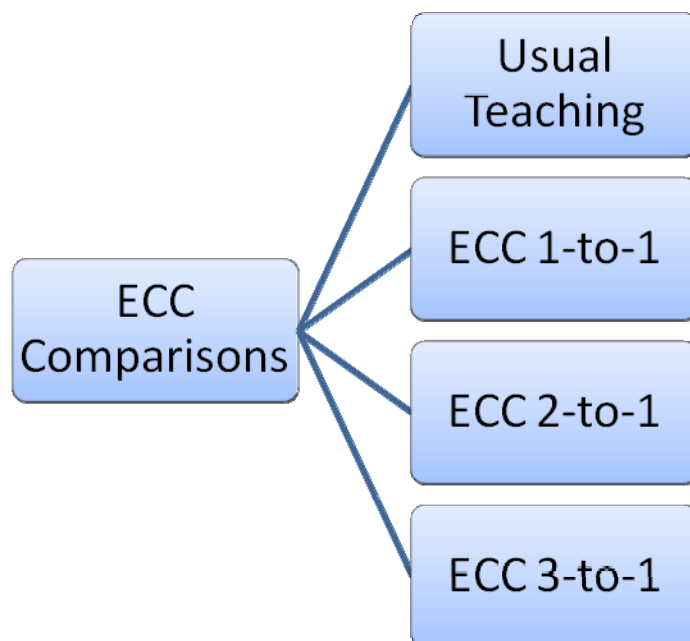


Figure 1: Decision Tree

The aim of the evaluation will be to identify, of the 4 potential comparators, which is the cost-effective option. That is, the economic evaluations based on these trials will address the following question: *What is the cost effectiveness and incremental cost effectiveness of the three types of delivery for Every Child Counts compared to usual teaching?* The time of the evaluation mirrors that of the randomised trial in that we have not attempted to extrapolate beyond the timeline of the actual trial. Consequently our cost effectiveness results only apply to a single term only. Because of the lack of a long term comparator group we cannot estimate whether or not the intervention's effectiveness is sustained.



There are 4 comparisons in the economic evaluation:

- (1) What is the cost effectiveness of ECC compared with usual teaching?
- (2) What is the cost-effectiveness of ECC delivered in pairs compared with ECC delivered to single children?
- (3) What is the cost-effectiveness of ECC delivered in triplets compared with ECC delivered to single children?
- (4) What is the cost-effectiveness of ECC delivered in triplets compared with ECC delivered in pairs?

We will collect data on the costs of the three ECC programmes, as well as the quantities of resources used, to enable us to calculate the costs of each arm of the trial. Outcomes from each arm of the trial will also be collected. We will compare these costs with the outcomes from the programmes to assess the incremental cost per additional child who gets a score higher than the mean score of the control group. In other words, how much does it cost to move one child who scores below average – that is, the average of the control group – to above average?

### *Methods*

Intermediate outcome: Primary outcome measure from the randomised controlled trial of ECC, which is achievement on PIM6 in January 2010 (and April 2010 for Trial 2) as measured by the independent testing. This will be measured for all four comparisons in the evaluation. Converting the raw effect size into the proportion of additional children who pass the mean score of the control group will convert the outcome into a value that is more relevant for policy-makers. For example, an effect size of 0.30 indicates that 12% more children would pass the control mean score.

We will also assess the extrapolated cost per child achieving level 2 or above at Key Stage 1, estimated from achievement on PIM6.

| <b>PIM6 Raw Score</b> | <b>National Curriculum Mathematics Level</b> |
|-----------------------|--|
| 0-9                   | W  |
| 10-13                 | 1c   |
| 14-17                 | 1b   |
| 18-20                 | 1a   |
| 21-23                 | 2c   |
| 24-26                 | 2b   |
| 27-28                 | 2a   |

**Table 1: Estimates of National Curriculum level associated with PIM6 raw scores, from p.41 Progress in Maths 6 Teacher's Guide**

GL Assessments, who developed PIM6, have published predicted levels for National Curriculum Mathematics associated with raw scores (Table 1). These scores show the estimated *current* level that a child would be working at under the National Curriculum given their PIM6 score. The assumption is that children in this evaluation would do at least as well as this when they are tested at Key Stage 1 during the summer term of the same academic year, setting a lower bound for the analysis.

Perspective: Resource use in the education sector, which includes the DCSF, local authorities, and schools. Resources used outside this sector are excluded, which includes

those used by students, their families, other sectors and any productivity changes, as well as capital costs (Drummond et al., 2005).

All costs will be adjusted to 2009 prices and presented in an undiscounted form. In terms of the sunk costs of developing ECC for single children, these costs are considered to be sunk costs, and equivalent in each arm since schools and teachers must have invested in this training regardless of which form of ECC was delivered by a school for the evaluation.

There are several potential results from the economic evaluation. Ranking the interventions according to their relative effectiveness will allow the dominant and extended dominant alternatives to be identified. If one of the numeracy interventions is better and costs less then it is said to dominate the alternative intervention, while extended dominance occurs if there is some combination of strategies that dominate all possible values of a third strategy. For example, if group teaching produces better maths scores and at a lower cost than individual tuition then it is said to be the dominant intervention. However, in past experience a situation that is quite common is for the more expensive intervention to be better than the less expensive alternative. In this case we need to calculate the cost per additional child getting past the mean of the control group and this information will be presented to policy makers for them to decide whether this marginal cost is worth the extra benefit. This is the Incremental Cost Effectiveness Ratio (ICER), which is the difference in costs and impact of two programmes (Drummond et al., 2005), calculated by:

$$\text{ICER} = \frac{\text{Cost of Programme 2} - \text{Cost of Programme 1}}{\text{Effect of Programme 2} - \text{Effect of Programme 1}}$$

### Synthesis

We will calculate an incremental cost per additional child passing the mean control score. We have chosen to convert any additional gain score into this standardised measure so that the results are more generalisable and not specific to the individual test used in this evaluation. Thus we will present the results as a cost effectiveness ratio with a cost effectiveness acceptability curve (CEAC) to show the level of uncertainty surrounding our estimates. CEACs are a useful way to summarising information about uncertainty, using the observed data to show the likelihood that an intervention is cost-effective compared with the alternative(s), based on what a decision-maker might be willing to pay per unit change in an outcome (Drummond et al., 2005, Fenwick and Byford, 2005). That is, in a CEAC we plot the willingness to pay per additional child getting above the mean score of the control group along the x axis against the probability of achieving a given value.

CEACs are used as an alternative to estimating confidence intervals around ICERs, which are statistically difficult to calculate (Fenwick and Byford, 2005, Fenwick et al., 2004). They derive from the joint distribution of incremental costs and incremental outcomes, usually resampled from the original data through non-parametric bootstrapping (Drummond et al., 2005, Fenwick and Byford, 2005, Fenwick et al., 2004). It is interpreted as “the probability that the ICER falls below the maximum acceptable ratio” (Fenwick and Byford, 2005, p.107) of monetary values for decision-makers, thus illustrating the uncertainty of the estimate of the ICER.

Cost per child and effect per child will be presented for each option (usual teaching, ECC1, ECC2, and ECC3) and ranked in ascending order of costs (from least expensive to most expensive). Dominated and extended dominated options will be excluded and appropriate ICERs will then be calculated.

### *Sensitivity analysis*

We will test our findings by using a sensitivity analysis. We will assess the cost-effectiveness of the intervention by changing key assumptions such as varying pay scales and time taken to train teachers in the intervention.

For example, KPMG have produced a report which assesses the long term costs of numeracy difficulties (Hudson et al., 2009). This report estimates that total direct costs to schools and local authorities are £2499.39 per child (average costs over 5 years, excluding sunk costs from programme development) for 1-to-1 numeracy training. Assuming that the estimate from the KPMG report is robust and valid, this value could be used as an estimate of the Cost of Programme 1, and used as a basis for estimating the additional costs of training teachers to deliver the programme to pairs or triplets of children (Programme 2). One implication of using this KPMG value is that the same assumptions must be applied to the rest of the model. It implies that the perspective of this evaluation will also be the joint perspective of schools and local authorities, excluding costs and effects of the programme that are not directly associated with these providers. Primarily, this excludes all costs already incurred as part of developing the programme, as well as direct costs attributable to any other sources, indirect costs, and intangible costs.

### *References*

- DRUMMOND, M. F., SCULPHER, M. J., TORRANCE, G. W., O'BRIEN, B. & STODDART, G. L. (2005) *Methods for the Economic Evaluation of Health Care Programmes*. Oxford, Oxford University Press.
- FENWICK, E. & BYFORD, S. (2005) A guide to cost-effectiveness acceptability curves. *The British Journal of Psychiatry*. 187: 106-108.
- FENWICK, E., O'BRIEN, B. J. & BRIGGS, A. (2004) Cost-effectiveness acceptability curves - facts, fallacies and frequently asked questions. *Health Economics*. 13: 405-415.
- HUDSON, C., PRICE, D., GROSS, J. & KPMG INFRASTRUCTURE GOVERNMENT AND HEALTHCARE (IGH) ADVISORY (2009) The long term costs of numeracy difficulties. London, Every Child a Chance Trust.  
[http://www.everychildachancetrust.org/pubs/ECC\\_long\\_term\\_costs\\_numeracy\\_difficulties\\_final.pdf](http://www.everychildachancetrust.org/pubs/ECC_long_term_costs_numeracy_difficulties_final.pdf)

## Response to comments from DFE on economic protocol

(1) Have included usual teaching in mathematics in assessing effectiveness.

The cost effectiveness ratios for pairs and triplets are relatively imprecise due to the relatively fewer numbers. Consequently, the economic data should be treated cautiously for these comparisons. Nevertheless, the effectiveness comparison between pairs and 1 to 1 show no evidence for a difference, yet there is a difference in costs, consequently one would recommend pairs over 1 to 1 in the absence of other evidence.

(2) The point about the evaluation of a short time period is correct. We have altered the protocol to emphasize our results only apply to one term.

(3) The effect size we use of 0.30 is the effect size difference between 1 to 1 and usual teaching, which is the correct difference to use. Both groups have improved trying to quantify that improvement in a randomized trial is not helpful as we are only interested in the additional benefit or difference of the intervention group. So we have not tried to calculate the effect size of usual teaching as we'd have to calculate the effect size of 1 to 1 teaching and then subtract one from the other and we'd end up with 0.30 anyway.

(4) We don't understand how you can publish incremental cost effectiveness ratios for dominant interventions. The incremental cost is negative so you would be dividing a positive incremental benefit into a negative cost and the result would be difficult interpret and couldn't be used in any future analyses. We are presenting the costs and differences, which others could potentially use in other analyses if required.

(5) We are not going to include children's longer term progress in the analysis because as you state in point 2 the evaluation is based on a RCT with 1 term outcome and it is impossible given the current design to estimate whether the effect is sustained in the longer term. What is required is a cluster RCT of schools with longer term follow-up to provide these data.

(6) We will give more detail of the cost data.

## Appendix 6: Randomisation Protocol

### ECC Trials 1 and 2 Randomisation Protocol for dealing with school requests regarding randomisation

(1) School requests that an individual child or individual children will not be randomised to the Autumn term (for a variety of reasons, e.g. child(ren) too young, child(ren) have limited spoken English etc)

- **Try to persuade school to keep the children in random allocation to any term.** For English as an Additional Language (EAL) children, make the point that the Numbers Count developers have stated that NC IS appropriate for these children in the Autumn term. For young children make the point that there is no evidence that NC is inappropriate for young children.
- **If the school insists that the children CANNOT have NC in Autumn term (for example if they are already receiving Reading Recovery) state that we will work with this situation, and ask the school to inform us on Data Form A the name and unique pupil number of this child and why they cannot be randomised to a specific term.**

(2) School has identified fewer children than minimum specified:

Trial 1 – schools should identify 12, so if the school has only identified 11:

- **Make the point that the usual number of children to identify for Numbers Count is 12, and first ask the school to try to identify the usual number, i.e. to follow normal practice.**
- **If the school is unable to do this, say that we will randomise the 11 (or 10 etc) children they have identified and there will be a gap in a random term – this time of this gap can't be chosen.**

Trial 2 – schools should identify **12-14 for Pairs** and **16-18 for Triplets** (and **20-22 for Barclays schools**)

- Ask the schools to identify a minimum of 12 (as this is normal practice) and if possible the minimum for whichever trial they are in.
- State that whatever number the schools are able to identify we will randomise, e.g. 15 for Triplets or 19 for Barclays.

## Appendix 7: Trial 2: Pairs: Beginning of Trial Information Pack to Schools

08.07.09

Dear Headteacher and Numbers Count Teacher

Thank you very much for agreeing to take part in the Independent Evaluation of Every Child Counts: Trial 2: Pairs. We are looking forward to working with you over the coming year and hope that taking part in the evaluation will also be a valuable experience for you and your school.

Included in this pack are a number of important documents which we will explain about in more detail below.

However to begin with there has been one change to the trial which we hope will make things easier for your school. The change has been made following advice from a number of schools taking part in the evaluation and concerns the timing of the Sandwell tests. **We would like you to administer the Sandwell Test to all children selected for an ECC intervention at the end of the Autumn term and at the end of the Spring term rather than at the beginning of the Spring term and the beginning of the Summer term.** We hope this fits in better for you, as you would usually exit Sandwell test the children taking part in Numbers Count at the end of the term rather than at the beginning of the following term. (The independent testing will still be conducted at the beginning of the Spring term – January)

**We have included an updated Flow of Actions Sheet which we hope makes this change clear.**

Please find enclosed in the blue folder in this pack, 14 copies of the parent information sheets which parents can keep and 14 parental consent forms which need to be signed by parents and returned to Hannah using the large freepost envelope provided. Also enclosed in the blue folder are 3 copies of the children's information sheet which should be read to each child by the NC teacher (or teacher conducting the Sandwell A test) before each child is tested using the Sandwell A test in September.

We have also included two data forms. **Data Form A should be completed and returned in the large freepost envelope with the parental consent forms. Data Form B should be completed and returned in the small freepost envelope.** The reason for having the two forms is for confidentiality, so the Sandwell test scores are only printed next to Unique Pupil Numbers and not full names. We have also emailed you Data Form A and B, if you would prefer to return them by email that is fine. (If you would prefer to send Data Form A and B by recorded delivery, please do so and we can reimburse you.)

**We are very happy for you to begin selecting the 12, 13 or 14 children now and holding meetings with parents to gain their consent. The Sandwell A testing, however, needs to be conducted at the beginning of the Autumn term.** Please return the data forms and signed parental consent forms as soon as possible in September using the freepost envelopes provided. Once we receive your selection information we will randomly allocate the children to method of delivery – individual or pair and let you know immediately so you can choose which children should be taught together in pairs from those allocated to pair delivery. Once we hear back from you we will randomly allocate the children to term of delivery and let you know immediately so you can begin teaching children allocated to Autumn term delivery.

**Please do get in touch with us (contact details below) if you have any further questions or need clarification about anything.**

Yours sincerely

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)  
[cjt3@york.ac.uk](mailto:cjt3@york.ac.uk)  
01904 328152

## **Appendix 8: Trial 2: Triplets: Beginning of Trial Information Pack to Schools**

08.07.09

Dear Headteacher and Numbers Count Teacher

Thank you very much for agreeing to take part in the Independent Evaluation of Every Child Counts: Trial 2: Triplets. We are looking forward to working with you over the coming year and hope that taking part in the evaluation will also be a valuable experience for you and your school.

Included in this pack are a number of important documents which we will explain about in more detail below.

However to begin with there has been one change to the trial which we hope will make things easier for your school. The change has been made following advice from a number of schools taking part in the evaluation and concerns the timing of the Sandwell tests. **We would like you to administer the Sandwell Test to all children selected for an ECC intervention at the end of the Autumn term and at the end of the Spring term rather than at the beginning of the Spring term and the beginning of the Summer term.** We hope this fits in better for you, as you would usually exit Sandwell test the children taking part in Numbers Count at the end of the term rather than at the beginning of the following term. (The independent testing will still be conducted at the beginning of the Spring term – January)

**We have included an updated Flow of Actions Sheet which we hope makes this change clear.**

Please find enclosed in the red folder in this pack, 22 copies of the parent information sheets which parents can keep and 22 parental consent forms which need to be signed by parents and returned to Hannah using the large freepost envelope provided. Also enclosed in the red folder are 6 copies of the children's information sheet which should be read to each child by the NC teacher (or teacher conducting the Sandwell A test) before each child is tested using the Sandwell A test in September.

We have also included two data forms. **Data Form A should be completed and returned in the large freepost envelope with the parental consent forms. Data Form B should be completed and returned in the small freepost envelope.** The reason for having the two forms is for confidentiality, so the Sandwell test scores are only printed next to Unique Pupil Numbers and not full names. We have also emailed you Data Form A and B, if you would prefer to return them by email that is fine. (If you would prefer to send Data Form A and B by recorded delivery, please do so and we can reimburse you.)

**We are very happy for you to begin selecting the 20, 21 or 22 children now and holding meetings with parents to gain their consent. The Sandwell A testing, however, needs to be conducted at the beginning of the Autumn term.** Please return the data forms and signed parental consent forms as soon as possible in September using the freepost envelopes provided. Once we receive your selection information we will randomly allocate the children to method of delivery – individual or triplet and let you know immediately so you can choose which children should be taught together in triplets from those allocated to triplet delivery. Once we hear back from you we will randomly allocate the children to term of delivery and let you know immediately so you can begin teaching children allocated to Autumn term delivery.



**Please do get in touch with us (contact details below) if you have any further questions or need clarification about anything.**

Yours sincerely

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
[hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
01904 328158

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01904 328152

**Appendix 9: Data Collection Form A**

**Trial 2: Pairs / Trial 2: Triplets with Barclays funding**

**Data Collection Form A**

**Please complete in block capitals**

School Name.....

Numbers Count Teacher.....

| <b>Full name of child selected for ECC intervention</b> | <b>Unique Pupil Number of child selected for ECC intervention</b> |
|---|---|
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**Appendix 10: Data Collection Form B**

**Trial 2: Pairs / Trial 2: Triplets with Barclays funding  
Data Collection Form B**

**Please complete in block capitals**

School Name.....

Numbers Count Teacher.....

| Unique Pupil Number of child selected for ECC | Sandwell Test A Score (September) | Record other information about the child here* |
|---|-----------------------------------|--|
|   |                                   |  |
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\*will normally be left blank but can be used for other information about the child following a discussion with Hannah e.g. if a child is also receiving Reading Recovery, or they have already had NC in year 1.

## **Appendix 11: Additional Funding: Letter to Schools who had agreed to take part**

10.07.09

Dear Headteacher and Numbers Count teacher

Thank you very much for agreeing to take part in Trial 2. I hope by now that you will have received the 'Trial Starter Pack' that I posted out to you last week. Please let me know if you haven't received this yet, so I can put another one in the post to you immediately so you can begin selecting children and talking to parents.

I am writing now to let you know that additional funding has been agreed for Schools taking part in Trial 2. This funding will include £256 per school to cover teaching assistant time to support the additional Sandwell testing that is necessary for the trial (£8 per TA hour x 8hours x 4 - Sep, Dec, March, July).

The additional funding will also include £180 per school to cover the purchase of two copies of the revised Sandwell test at £90 per copy.

You will need to order two copies of the revised Sandwell test (SENT R – this includes a revised Sandwell A test and the new Sandwell B test) straight away in order to ensure that you have them for September. Please liaise with your teacher leader if you need advice about ordering the SENT R.

I hope this additional funding will make things easier for you.

Yours sincerely,

Hannah

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

## **Appendix 12: Additional Funding: Letter to schools who attended the recruitment conference**

10.07.09

Dear Headteacher and Numbers Count teacher

Thank you very much for finding the time to attend the Trial 2 conference.

I am writing now to let you know that additional funding has just been agreed for Schools who decide to take part in Trial 2. This funding would include £256 per school to cover teaching assistant time to support the additional Sandwell testing that is necessary for the trial (£8 per TA hour x 8hours x 4 - Sep, Dec, March, July).

The additional funding would also include £180 per school to cover the purchase of two copies of the revised Sandwell test at £90 per copy.

You will need to order two copies of the revised Sandwell test (SENT R – this includes a revised Sandwell A test and the new Sandwell B test) straight away in order to ensure that you have them for September. Please liaise with your teacher leader if you need advice about ordering the SENT R.

I hope this additional funding will make things easier for you if you decide to take part in Trial 2. Please could I ask you to return a school consent form as soon as possible if you would like to take part in the evaluation and I will then post out a 'Trial Starter Pack' to you immediately.

Yours sincerely,

Hannah

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

## **Appendix 13: Additional Funding: Letter to Schools who didn't attend the recruitment conference**

10.07.09

Dear Headteacher and Numbers Count teacher

As you know we have invited your school to take part in Trial 2, one aspect of the independent evaluation of ECC that is being conducted by the University of York and Durham University. I hope by now that you have received the Conference Information Pack that I posted out to you last week, which gave further details about Trial 2. If you have not received this pack please let me know and I can post another out to you immediately. If you have any questions about the information in the pack and what it would mean for your school to take part in Trial 2, please do get in contact with me by email or telephone and I will be happy to talk through the evaluation with you.

However I am writing now to let you know that additional funding has just been agreed for Schools who decide to take part in Trial 2. This funding would include £256 per school to cover teaching assistant time to support the additional Sandwell testing that is necessary for the trial (£8 per TA hour x 8hours x 4 - Sep, Dec, March, July).

The additional funding would also include £180 per school to cover the purchase of two copies of the revised Sandwell test at £90 per copy.

You will need to order two copies of the revised Sandwell test (SENT R – this includes a revised Sandwell A test and the new Sandwell B test) straight away in order to ensure that you have them for September. Please liaise with your teacher leader if you need advice about ordering the SENT R.

I hope this additional funding will make things easier for you if you decide to take part in Trial 2. Please could I ask you to return a school consent form as soon as possible if you would like to take part in the evaluation and I will then post out a 'Trial Starter Pack' to you immediately.

Yours sincerely,

Hannah

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

## Appendix 14: NC Teachers' Survey Cover Letter

21.08.09

Dear Numbers Count teacher

I hope you have had a nice summer break,

Please find enclosed with this letter some information from Marie Heinst and Mary Clark (maths consultants) about adapting the Numbers Count intervention so that it can be delivered to very small groups of children.

Please contact Marie and Mary ([marieheinst@googlemail.com](mailto:marieheinst@googlemail.com) and [marybj.clark@virgin.net](mailto:marybj.clark@virgin.net)) if you have any further questions or need further advice about adapting Numbers Count for delivery to very small groups of children.

Also some preliminary dates for your diaries; Marie and Mary will be running one training day for you on small group intervention work, the proposed dates at the moment are either the 17<sup>th</sup> November in London or the 18<sup>th</sup> November in Birmingham or Leeds (location to be confirmed), more information will be sent to you about this training event in due course.

Please also find enclosed with this letter 'Trial 2 Survey: Part A'. Please could you complete this survey and return in the FREEPOST envelope provided.

I have also enclosed a sample pupil log and an information sheet detailing how pupil logs should be completed. Individual pupil logs for each child in the trial will be sent to you during the Autumn term.

If you have any questions about completing the surveys, as always, please do contact me.

Yours sincerely,

Hannah

Hannah Ainsworth (Research Fellow at the University of York and ECC Trial Co-ordinator)  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

Dr. Carole Torgerson (Reader at the University of York and Co-chief Investigator of the ECC evaluation)

## Appendix 15: ECC Written Guidance to Support Trial 2 Group Work

*Written by: Marie Heinst and Mary Clark 2009, DCSF Maths Consultants*

### Guidance to support *Every Child Counts Evaluation Trial 2 (Pairs and triplets)*

#### Effective group work in mathematics

Research and practitioner experience make it clear that there are benefits to be derived from establishing groups as a context for learning and teaching mathematics. In order to establish an environment for small groups of children to work constructively some basic training for the children is likely to be necessary as a carefully planned feature of teaching sessions.

Comments on possible benefits of group work from different perspectives:

#### Numbers Count Teacher (NCT)

- Petal seems to listen to Jas more than she does to the teacher
- Children derive security from working with each other
- Children seem to enjoy it more
- They play games with each other in a way that is more lively and engaged than with the teacher
- Once the children are working the NCT is able to observe and feedback what is learnt into the support for the child

#### Teacher Leader

- One child could be getting on while the other child is receiving more individual attention – this maximises teaching
- Opportunities for cognitive conflict and collaboration within activities, such as comparing strategies and outcomes
- Rehearsing in a group – children can rehearse ideas within the group and gain from listening to each other to support individual development
- Children learning from each other and not just the teacher

#### Education research

- Despite some views that group work is only beneficial for children's social development, we showed that group work can more positively influence academic progress than other forms of teaching and learning. At Key Stage 1, benefits were seen in reading and mathematics.
- Involving pupils in group skills training and using group work alongside other forms of teaching and learning, can raise the levels of engagement in learning, encourage children to become more actively engaged in the learning process and facilitate more thoughtful learning processes.



*Teaching and Learning Research Programme (2005) Improving pupil group work in classrooms: A new approach to increasing engagement and learning in everyday classroom settings at Key Stages 1,2 and 3. The research focused on group work across the curriculum.*

## Communicating in mathematics

The table below gives some detail of the kinds of skills that will support effective group work in mathematics.. It is based on the poster within the 'Speaking, Listening, Learning: working with children in Key stages 1 & 2' resource box (Primary National Strategy). The poster has been adapted to reflect a mathematics focus.

| Year     | Speaking   | Listening  | Group Work   |
|----------|--|--|--|
| Year 1/2 | <p>Describe and explain their working giving as much information as needed.</p> <p>Use mathematical vocabulary appropriate to their age.</p> <p>Order their oral response in some logical way.</p> <p>Use mathematical language accurately, for example to describe a shape.</p> <p>Articulate the mathematics of a practical situation such as a calculation arising from a real situation.</p> | <p>Listen with interest to questions or explanations making jottings as appropriate.</p> <p>Listen to mathematical instructions and show understanding by carrying them out.</p> <p>Ask simple questions seeking clarification or reassurance.</p> <p>Listen to questions or explanations and seek clarification or further detail.</p> <p>Create a mental image in response to an idea or situation presented orally.</p> | <p>Ask and answer questions and suggest ideas to others.</p> <p>Take turns as speaker and listener when working in pairs or small groups.</p> <p>Consider other people's ideas, explanations or methods.</p> |

The following teaching strategies will support the further development of children's learning within a small group as they help children improve the speaking and listening skills that underpin mathematical communication and reasoning.

The use of mathematical vocabulary, the technical language of mathematics, is just a part of mathematical communication. It is however a very important part which children need to have plenty of experience of incorporating in their own talk and recording of the mathematics they are learning.

Other elements of mathematical communication (increasing in challenge from National Curriculum Level 1 onwards) are

- Representing mathematics with objects or pictures
- Using mathematical symbols and diagrams
- Interpreting mathematical symbols and diagrams
- Presenting information and findings in a clear and organised way
- Representing situations in mathematics, using words, diagrams and symbols as appropriate
- Presenting solutions to problems in the context in which the problem was presented

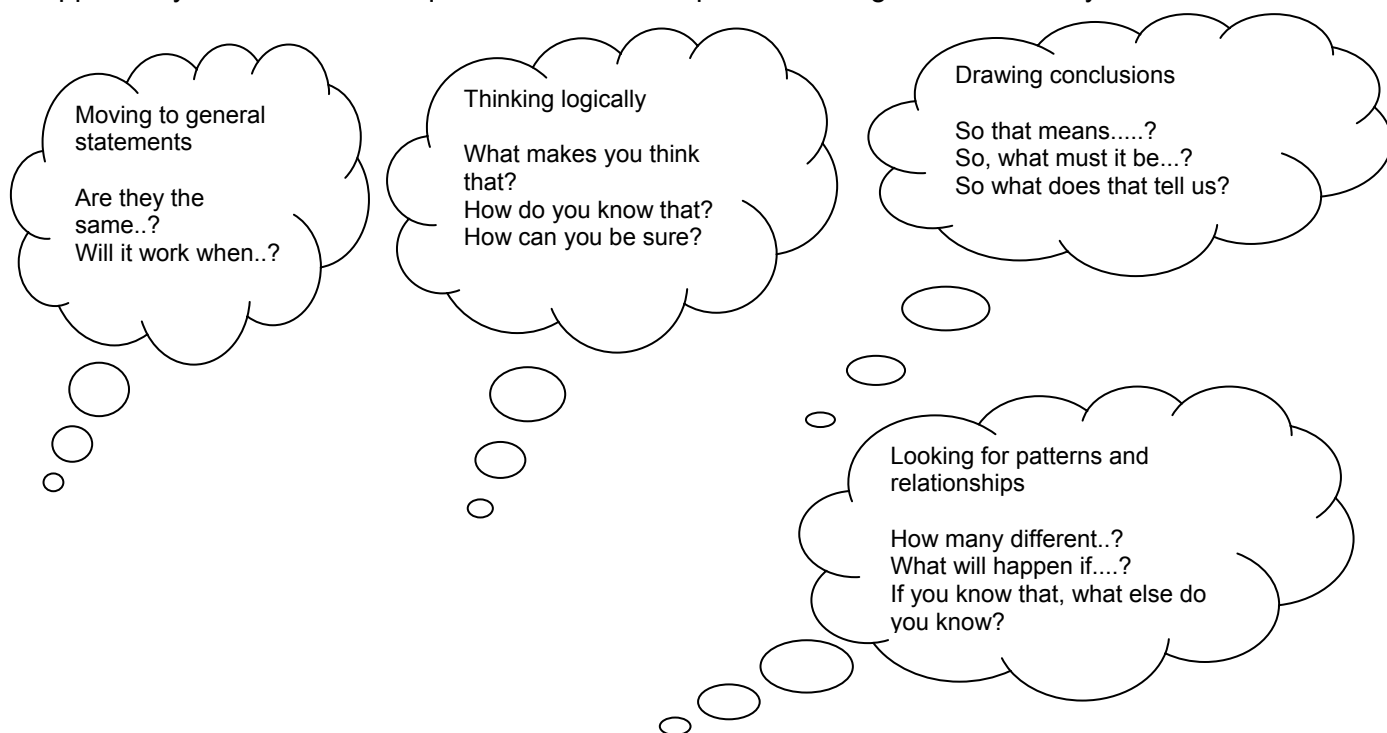
For some children their own emergent methods of recording will provide a stepping stone to more conventional recording.

Teaching strategies will also include drawing on structures to encourage communicating mathematically. These structures may involve sentence starters such as *'I think there are ..... because, I know ..... and ....., It could be... because..., It can't be ..... because...'* The use of talk partners can also help children to rehearse and develop mathematical communication providing children understand the purpose of talk partners and the roles of speaking and listening. Structuring the use of talk partners by asking partners to swap the role of the 'doer' and 'listener' with clear expectations of what each role will entail helps children to maximise the potential of this strategy.

Encourage the children to develop their communication skills through talking about their mathematics, including explaining what they have found out and why a method does or does not work. Developing communication skills will also include listening to peers, reflecting on what is said and responding. Provide opportunities for children to pose their own mathematical questions and use mathematical language and terminology. Model the use of this language and terminology in your dialogue with the children when explaining an activity or extending their initial response. Demonstrating a range of representational forms will help the children widen their own repertoire.

## Reasoning in mathematics

The thoughtful use of certain key questions can encourage mathematical reasoning as children engage with an activity or solve a range of problems. Teachers can also show interest, genuine puzzlement and thoughtfulness when asking these questions. If these questions are modelled within many different contexts and activities the children have the opportunity to internalise the questions and develop their thinking. Questions may focus on:



Opportunities for reasoning mathematically occur when children are encouraged to search for patterns and relationships in their mathematical work. Moving from particular examples to general statements about mathematical ideas encourages reasoning, for example, noticing that  $3+5=8$ ,  $1+7=8$ ,  $7+3=10$  and after prompting testing out lots of combinations of odd numbers to support the generalisation that adding two odd numbers results in an even number. Children then illustrate their explanations and justify their thinking. It is useful to also pick up on false generalisations, such as younger children making a generalisation that the size of a coin is what determines the value so larger coins are necessarily of the higher value.

### **Adaptations to some of the forms in *Numbers Count Handbook* to support NCTs working with pairs or triplets in the Trial 2 evaluation**

Numbers Count teachers are being asked to adapt their teaching to make the sessions suitable for small groups rather than trying to teach two (or three) individual lessons in less time. Learning plans should therefore be written for the group rather than for each individual in the group. Diagnostic assessments should also be conducted for the group rather than for each individual in the group.

The following elements of the *Numbers Count Handbook* 2008 – 2009 have been slightly adapted to support NCTs working with pairs or triplets in the Trial 2 evaluation:

- a. Stages overview, page 11 (see Document 1 in Appendix)
- b. Child observation record, page 153 (see Document 2 in Appendix)
- c. Diagnostic assessment record, page 155
- d. Group learning plan (adapted from the Individual Learning Plan), page 179 (see Document 3 in Appendix)
- e. Lesson plan, page 191 (see Document 4 in Appendix)

**a. Stages overview, page 11 of the handbook**

Refer to Document 1 in Appendix: STAGES (adapted for pairs/triplets of children in Trial 2 evaluation)

**b. Child observation record, page 153 of the handbook**

Adaptations have been made, in particular to support the observation of the focus children as they work in small groups in class.

1. In the case of children from pairs/triplets being in same class, use adapted version of observation record.
2. In the case of children from pairs/triplets being in different classes, it is still important to use adapted version of the original to support observation and recording of group dynamics.

Refer to Document 2 in Appendix: Adapted Numbers Count Child Observation Record for Trial 2 evaluation (pairs or triplets of children) in a class mathematics lesson

**c. Diagnostic assessment record, pages 155- 178 inc. of the handbook**

Use the information learnt from the children's responses to the Sandwell Test A to inform the priority areas for focus to be tackled during the use of the diagnostic assessment record. There is a variety of ways of doing this; for example, a different coloured highlighter pen for each child to indicate areas of the diagnostic assessment record the children are competent with and those that need to be investigated in more depth. Then, as the planning is done for the diagnostic sessions, a useful overview of the similarities and differences relating to the children's strengths and difficulties is readily available.

**d. Group learning plan (adapted from the Individual Learning Plan), page 179 of the handbook**

Refer to Document 3 in Appendix: Group learning plan (adapted from the Individual Learning Plan for Trial 2 evaluation (pairs or triplets of children))

There are a variety of ways of completing this plan to take account of working with a pair or triplets for example a different coloured highlighter pen for each child to support differentiation within the planning.

**e. Lesson plan, page 191 of the handbook**

Refer to Document 4 in Appendix: Numbers Count Lesson Plan (adapted for Trial 2 evaluation)

Use the adapted lesson plan for the Trial 2 evaluation. NCTs will probably want to use a strategy that supports planning for differentiated opportunities to reflect the children's assessed needs. As the assessment information is reflected on to inform planning, it is likely to become apparent that where children do not have a match in the areas with which they struggle their difficulties may be clustered within a particular progression.

For teaching purposes this provides opportunities for the children to experience the different stages within a particular progression thus reinforcing linkages within the mathematics. Here are some examples of planning for children in pairs or triplets where the diagnostic assessment has provided clear guidance on individuals' next steps. In the examples are some suggested strategies for providing differentiated learning and teaching.

In a triplet, Ali needs further development of counting from one, Brian is fairly confident with this but has not mastered counting on from a small number that is not one, whereas Cara can count on from any number up to 10 and is ready to explore using this skill for the early stages of addition.

Provide the group with a counting task with a purpose such as counting 1p coins into bags of 20p each ready for a class activity. Encourage the group to talk about how they are going to count coins into bags of 20. Support children to listen to each other and ask questions as necessary. It is likely that as they explain how they are going to do this they will enact their description. Before the teacher draws out the different features of the counting strategies ask the children to evaluate the methods using prompts such as 'Which way was easiest and why?' 'What differences did you notice?' 'Which way was quickest and why?' If children have resorted to earlier but secure methods, remind them by modelling the current stage of their counting skills. The opportunity for peer discussion and reflection will promote deeper thinking.

In a pair, Anna is able to find pairs of numbers which add to 10 but is unable as yet to systematically find all pairs, whereas Bally can partition numbers to 20 in a variety of ways and in discussion can begin to do this systematically.

This activity involves working together collaboratively to find all the pairs of positive numbers that add to ten. Explain to the children that in the following activity you want them to talk aloud about how they are working out all the pairs. Provide a coat hanger with 10 pegs and ask Anna to describe how to find the first pair of numbers that add to ten and show it on the hanger. Encourage **both** children to check. Then prompt Bally to explain how he will find the next pair. It is likely that as Anna is less systematic Bally will then be challenged to find a system to find the next pairs. As the activity proceeds encourage the children to help each other, explaining as they make their choices.

One child's strategy for carrying out an activity can provide a consolidation strategy for another child and use and application for all the children as a variety of contexts is introduced. An individual child's demonstration and explanation can challenge and extend the current thinking of another child (cognitive conflict).

**Appendix: Document 1**

(adapted from *Numbers Count Handbook 2008 – 2009*, page 11)

**STAGES (for small group intervention for pairs/triplets of children in Trial 2 evaluation)**

| SELECTION  |  |   |
|--|--|---|
| (Refer to relevant flow chart provided by the University of York for details of this stage)  |  |   |
| Phase 1<br>Identify potential children   | Phase 2<br>Select first children   | Phase 3<br>Select further children  |
| June – July  | September  | whenever new places become available  |
| <ul style="list-style-type: none"> <li>• about 15 children towards the end of Y1</li> <li>• using school's range of tracking procedures and data</li> </ul>  | <ul style="list-style-type: none"> <li>• reduce list to the 12 top priorities</li> <li>• decide who will start when</li> <li>• select the first 4 children</li> <li>• discuss with parents / carers</li> </ul>   | <ul style="list-style-type: none"> <li>• confirm that children on waiting list are still the priority</li> <li>• select the next child(ren) to start</li> <li>• discuss with parents / carers</li> </ul>  |
| ↓  |  |   |
| INTERVENTION: approximately 12 weeks   |  |   |
| Phase 1<br>Initial Assessment  | Phase 2<br>Teaching  | Phase 3<br>Exit   |
| approximately 2 weeks  | approximately 9 weeks  | approximately 1 week  |
| <ul style="list-style-type: none"> <li>• baseline measurement of attainment (Sandwell A available prior to allocation of pairs/triplets)</li> <li>• attitude survey (optional)</li> <li>• classroom observation (Use adapted sheet for Trial 2)</li> <li>• initial diagnostic assessment (Refer to additional notes for Trial 2 and detail in FAQs, page 3))</li> <li>• identification of priorities- (for pairs and triplets of children in Trial 2)</li> </ul> | <ul style="list-style-type: none"> <li>• daily 30-minute small group lessons in a dedicated teaching space</li> <li>• small group work (in pairs or triplets according to Trial 2 allocations)</li> <li>• ongoing assessment and planning for the group (for pairs and triplets of children in Trial 2)</li> <li>• regular liaison with class teacher</li> </ul> | <ul style="list-style-type: none"> <li>• preparation for exit from small group work</li> <li>• support in the classroom</li> <li>• confirmation of exit date</li> <li>• measurement of progress</li> <li>• final diagnostic assessment- (Refer to additional notes for Trial 2)</li> <li>• planning with class teacher</li> </ul> |
| ↓  |  |   |
| FOLLOW UP  |  |   |
| (Refer to relevant flow chart provided by the University of York for details of this stage)  |  |   |
| Ongoing Support  | Monitoring   |   |
| <ul style="list-style-type: none"> <li>• liaison between Numbers Count Teacher and class teacher</li> <li>• occasional small group sessions lessons if opportunity arises</li> </ul>   | <ul style="list-style-type: none"> <li>• post-exit measures at 3 months and 6 months</li> <li>• national test results</li> <li>• school monitoring procedures</li> </ul>   |   |

**Appendix: Document 2**

(adapted from *Numbers Count Handbook 2008 – 2009*, page 153)

**Adapted Numbers Count Child Observation Record  
for Trial 2 evaluation (pairs or triplets of children)  
in a class mathematics lesson**

|   |                     |
|---|---------------------|
| Children's names<br>(use initials for each child) | School<br><br>Class |
| Observer  | Date of observation |

| <b>Mathematics Lesson Phase and Content</b>                    | <b>Observations</b>  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• What does the child do?<br/>e.g. listen, concentrate, answer questions, collaborate . . .</li> <li>• How does s/he respond to the mathematical tasks set for him/her?</li> </ul>  |
| <b>Whole class teaching</b><br>Content:                        |  |
| <b>Adult-led small group teaching</b><br>Content:              | <ul style="list-style-type: none"> <li>• How does s/he respond to the other children in the group?</li> <li>• To what extent does s/he offer contributions in the group?</li> <li>• How successful is s/he at sharing resources with other children in the group?</li> <li>• How confident is s/he at discussing and listening to mathematical comments from peers?</li> </ul> |
| <b>Working with other children, without adults</b><br>Content: |  |
| <b>Working unaided and alone</b><br>Content:                   |  |
| <b>Further comments</b>  |  |

**Appendix: Document 3**  
 (adapted from *Numbers Count Handbook 2008 – 2009*, page 179)

**Group Learning Plan for Trial 2 evaluation**  
 (pairs or triplets of children)

(adapted from the Individual Learning Plan)

Children's names:  
 School:

Date:

| <b>Counting and Understanding Number</b>   |  |                   |
|--|--|-------------------|
| <b>Using and Applying Mathematics</b>      |  |                   |
| <b>Themes</b>                              | <b>Existing Skills Knowledge and Understanding</b> | <b>Next Steps</b> |
| 1. Counting forwards                       |  |                   |
| 2. Counting backwards                      |  |                   |
| 3. Estimate and count a set of objects     |  |                   |
| 4. Reading and writing numerals            |  |                   |
| 5. Comparing and ordering numbers          |  |                   |
| 6. Place value                             |  |                   |
| 7. Number sequences & odd and even numbers |  |                   |
| 8. Doubling and halving                    |  |                   |
| 9. Ordinal numbers                         |  |                   |



| <b>Knowing and Using Number Facts</b>   |   |                   |
|---|---|-------------------|
| <b>Using and Applying Mathematics</b>   |   |                   |
| <b>Themes</b>   | <b>Existing Skills, Knowledge and Understanding</b> | <b>Next Steps</b> |
| 1. Derive and recall pairs of numbers<br><br>2. Recall and find doubles and halves<br><br>3. Counting in steps<br><br>4. Patterns relationships and checking  |   |                   |
| <b>Calculating</b>  |   |                   |
| <b>Using and Applying Mathematics</b>   |   |                   |
| <b>Themes</b>   | <b>Existing Skills, Knowledge and Understanding</b> | <b>Next Steps</b> |
| 1. Vocabulary and symbols for calculating<br><br>2. Adding smaller numbers<br><br>3. Subtracting smaller numbers<br><br>4. Adding larger numbers<br><br>5. Subtracting larger numbers<br><br>6. Addition and subtraction / using inverses<br><br>7. Multiplication and division |   |                   |

Appendix: Document 4  
 (adapted from *Numbers Count Handbook 2008 – 2009*, page 191)

**Small Group intervention Lesson Plan**  
 (adapted for Trial 2 evaluation)

Date \_\_\_\_\_ Children's names \_\_\_\_\_

| Minutes<br>Approx    | Learning<br>Focus                                | Learning Episodes | Reflections and Next<br>Steps |
|----------------------|--|-------------------|-------------------------------|
|                      | <b>Familiar<br/>Activity</b>                     |                   |                               |
|                      | <b>Counting<br/>Activities</b>                   |                   |                               |
|                      | <b>Current<br/>Learning<br/>Activity 1</b>       | <i>Objective:</i> |                               |
|                      |  |                   |                               |
|                      | <b>Current<br/>Learning<br/>Activity 2</b>       | <i>Objective:</i> |                               |
|                      |  |                   |                               |
|                      | <b>Further<br/>Application<br/>Opportunities</b> |                   |                               |
|                      | <b>Reflection</b>                                |                   |                               |
| <b>Home Activity</b> |  |                   |                               |

## Appendix 16: Trial 2: Pairs: NC Teacher Survey Part A

### Every Child Counts Evaluation

### Trial 2: Pairs Survey: Part A

**To be completed at the beginning of Trial 2: Pairs (Autumn Term Sep 2009)**

Thank you very much for taking part in Trial 2: Pairs. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you have any questions about this survey please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

**PLEASE COMPLETE IN BLOCK CAPITALS**

Name of School.....

Your name.....

Your post/role in school (e.g. Numbers Count teacher and Assistant Head etc):.....

.....

Gender:

Male

Female

Number of years teaching experience before this year:

Highest educational qualification (please tick one box):

PGCE

Masters level

Bachelors Level

Teaching Diploma/Teaching Certificate

Other. Please give details.....

Any other qualifications (please tick as many boxes as apply):

Any qualifications related to teaching children with special educational needs

Any qualifications related to teaching mathematics

Any other relevant qualifications. Please give details.....

.....

**Continued Overleaf...**

At this point, in general, would you prefer to deliver Numbers Count to an individual child or to a pair of children?

- I would prefer to deliver Numbers Count to an individual child
- I would prefer to deliver Numbers Count to pairs of children
- I do not have any preference.

Please provide any reasons for your chosen preference.....

.....

.....

*Thank you for completing this survey. Please return in the FREEPOST envelope provided to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD.*

# Appendix 17: Trial 2: Triplets: NC Teacher Survey Part A

## Every Child Counts Evaluation

### Trial 2: Triplets Survey: Part A

To be completed at the beginning of Trial 2: Triplets (Autumn Term Sep 2009)

Thank you very much for taking part in Trial 2: Triplets. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you have any questions about this survey please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

**PLEASE COMPLETE IN BLOCK CAPITALS**

Name of School.....

Your name.....

Your post/role in school (e.g. Numbers Count teacher and Assistant Head etc):.....

.....

Gender:

Male

Female

Number of years teaching experience before this year:

Highest educational qualification (please tick one box):

PGCE

Masters level

Bachelors Level

Teaching Diploma/Teaching Certificate

Other. Please give details.....

Any other qualifications (please tick as many boxes as apply):

Any qualifications related to teaching children with special educational needs

Any qualifications related to teaching mathematics

Any other relevant qualifications. Please give details.....

.....

**Continued Overleaf...**

At this point, in general, would you prefer to deliver Numbers Count to an individual child or to a triplet of children?

- I would prefer to deliver Numbers Count to an individual child
- I would prefer to deliver Numbers Count to triplets of children
- I do not have any preference.

Please provide any reasons for your chosen preference.....  
.....  
.....

*Thank you for completing this survey. Please return in the FREEPOST envelope provided to Hannah Ainsworth, University of York, Heslington, York, YO10 5DD.*

## **Appendix 18: Trial 2 Funding Letter to Teacher Leaders**

07.10.09

Dear Teacher Leader

You may remember that additional funding was agreed for schools taking part in Trial 2 of the Independent Evaluation of Every Child Counts. The letter provided below has been sent to all schools taking part in Trial 2 informing them of how they can claim this additional funding.

I am aware however, that on your schools behalf, you may have purchased the two copies of the revised Sandwell tests (SENTR) which some of the additional funding is to cover. If you purchased the revised Sandwell tests (SENTR) for schools taking part in the evaluation in your area, then you are able to raise an invoice to the Department of Children Schools and Families (DCSF) in order to claim back this money.

Please could you list each school (only schools taking part in Trial 2) you purchased 2 copies of the revised Sandwell test (SENTR) for and provide proof of purchase. Invoices should be addressed to:

**DCSF Administrator  
Raising Standards in Maths, Science and ICT Team  
DCSF  
Sanctuary Buildings  
Great Smith Street  
London SW1P 3BT**

I hope this information is clear, as always please do get in touch with me in you need clarification about anything,

Yours sincerely,

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

## Appendix 19: Trial 2 Funding Letter to Schools

07.10.09

Dear [Numbers Count teacher]

Thank you very much your hard work and patience at the beginning of term, I hope everything is going smoothly now you have received your random allocations.

You may remember that I wrote to you at the end of the Summer term to inform you that additional funding had been agreed for schools taking part in Trial 2. I am writing to you now to let you know the arrangements for claiming this additional funding from the Department for Children Schools and Families (DCSF).

Each school taking part in Trial 2 can claim funding to cover the purchase of two copies of the revised Sandwell test (SENTR) at a cost of £90 each (in total £180). You should raise an invoice to the Department for Children Schools and Families (DCSF) to claim for this amount (please provide proof of purchase). If your teacher leader bought the revised Sandwell tests (SENTR) on your schools behalf, you do not need to do anything; your teacher leader will be able to claim funding from the DCSF to cover the cost of the tests.

Each school taking part in Trial 2 can also claim funding to cover Teaching Assistant time used to help conduct the additional Sandwell tests that are required for the evaluation. Each school can claim up to a maximum of 8 hours of Teaching Assistant time at £8 per hour, at each testing point during the year (Sep, Dec, Mar, July). So in total 32 hours of Teaching Assistant time, at £8 per hour, over the school year (a total of £256).

Each school can only raise invoices for work carried out and not in advance of work to be undertaken, and should bear in mind that two Financial Years are covered over the school year and so a school is not be able to send one invoice to cover all four tests.

I would therefore suggest that you either:

- raise 4 invoices over the school year, one at the end of each testing point (so for example you would now be able to claim up to a maximum of £64 to cover 8 hours of teaching assistant time at £8 per hour for the September testing)
- or raise 2 invoices over the school year, one to cover the September, December and March testing points (claiming a maximum of £192) and one to cover the July testing point (claiming a maximum of £64).

All invoices should be raised to the Department for Children Schools and Families (DCSF) and should be addressed to:

**DCSF Administrator**  
**Raising Standards in Maths, Science and ICT Team**  
**DCSF**  
**Sanctuary Buildings**  
**Great Smith Street**  
**London SW1P 3BT**

I hope this information is clear, as always please do get in touch with me in you need clarification about anything,



Yours sincerely,

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## Appendix 20: Autumn Term Information Pack

27.11.09

Dear Head Teacher and Numbers Count teacher

### ECC Evaluation – Autumn Term Information Pack

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts. This letter contains information about a number of requirements for the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

### Sandwell Testing

As you are aware all children taking part in the trial need to be tested using Sandwell B from the revised SENTR package. Testing can begin as soon as the children receiving Numbers Count this term have had 12 weeks of teaching (or before if this is too near the end of term). As in September, for the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DCSF for teaching assistant time as detailed in a previous letter. **All testing should be completed before the Christmas Holidays.** Please complete and return Data Form C (included in this pack) by email, fax or Freepost, before the Christmas Holidays. Thank You.

### Strengths and Difficulties Questionnaire (Wider outcomes test)

We would like to ask each school to help us collect wider impact information on each of the children taking part in the trial. This is an additional task; however we would be very grateful if a Strengths and Difficulties Questionnaire could be completed for each child in the trial by the Numbers Count teacher in collaboration with the Year 2 teacher who teaches the child in question. This should be done when children allocated to Autumn term have been exited from Numbers Count. We would also be very grateful if you could also ask parents/carers of all children taking part in the trial to complete a Strengths and Difficulties Questionnaire. We are happy for you to do this with parents when they come into school or in any way that is convenient for you and the parents. If you are able to send on all the completed questionnaires to us in the Freepost envelope provided or by fax before Christmas that would be very helpful. A copy of the Strengths and Difficulties Questionnaire is included in this pack; please make as many photocopies as you need.

### Pupil Logs

As detailed previously, over the course of the year we would like you to complete a pupil log for every child taking part in the evaluation. A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

Please return the completed Pupil logs in the Freepost envelope provided or by fax or send electronic copies by email. A list of all the children's names and their trial IDs are included in this pack for your reference.

## **Independent Testing**

As detailed in previous written information, and as discussed at the conference, all the children taking part in the trial will be tested by independent testers, all of whom will be experienced teachers and in most cases registered inspectors in current practice (all will have CRB checks). We are now able to provide you with further information about the independent testing and we would also like to take this opportunity to ask for your help in conducting the independent testing.

Hannah will be in touch within the next week or so to propose a suitable time for an independent tester to visit your school during the first week back after the Christmas break (week commencing 4<sup>th</sup> January 2010). Each child taking part in the trial will be assessed using the GL Assessment (NFER) Progress in Maths 6 and the PIPS attitudinal assessments. PIPS (Performance Indicators in Primary schools) from the Centre for Evaluation and Monitoring at Durham University, is designed to measure wider outcomes of the Numbers Count intervention, such as confidence and enjoyment of maths and other subjects.

The testing will be done in small groups of four children at a time, repeated to cover all children in the trial, during a morning or afternoon session. We would very much appreciate it if you would be able to provide an appropriate room in which this can be done, and also if someone from your school would help with the organisation. This would include taking children to the room and being with them as a familiar adult during the assessment. This could be a TA, or perhaps a governor with a particular interest, or indeed anyone who knows the school and you are happy with. We will be paying schools £50 directly for your help with this.

**We are aware there is a lot of information here, as always please contact the trial co-ordinator (Hannah) should you require any more information or clarification.**

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

## Appendix 21: Data Collection Form C

### ECC Trial [INSERT TRIAL] Data Collection Form C

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

If a child has left the trial and you have already let me know, please do not worry if their Trial ID still appears here. Please let me know their gender but just write 'left' under Sandwell B Score.

| Child's Trial ID | Sandwell B Test Score<br>(December) | Child's Gender (M/F) |
|------------------|-------------------------------------|----------------------|
| INSERT           |                                     |                      |
| INSERT           |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
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|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |
|                  |                                     |                      |

## Appendix 22: Trial 2: Pairs: Pupil log

Please refer to Information Sheet for completing pupil logs

### ECC Evaluation Trial 2: Pairs – Pupil Log

School name:.....

Child's Trial ID:.....

Term in which child received an intervention (please tick one box):

- Autumn
- Spring
- Summer

How did the child receive the intervention?

- As an individual
- In a pair

Total number of intervention lessons delivered one-to-one

Total number of intervention lessons delivered one-to-two

Please indicate your perception of the level of engagement with the intervention shown by the **child** using the following scale (please tick one box):

- Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Please indicate your perception of the level of engagement with the intervention shown by the **parent/carer** using the following scale (please tick one box):

- Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Were all the child's intervention lessons 30 minutes in length?

- Yes
- No      If no, please give details (e.g. how many were longer/shorter and why).....

Did the child exit the intervention at 12 weeks?

- Yes
- No      If no, why not?.....

Please detail what has happened to the child at the end of the intervention (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other      If other, please give details.....

Please provide any other information about the child which you think could be relevant:

.....  
.....

## Appendix 23: Trial 2: Pairs: Information for Completing Pupil Logs

### Every Child Counts Evaluation – Trial 2: Pairs

#### Information for completing Pupil Logs

During the course of the year we would like the Numbers Count teacher to complete a log for each child who was originally selected to take part in the trial (even if they leave part-way through). Please do not complete a log for children who are *not* in the trial (for example a log should not be completed for any children who were not selected originally for random assignment).

At the end of each term please complete a pupil log for all children who have received Numbers Count either individually or in a pair during the term. Please photocopy as many copies of the pupil log form as you need.

**We have provided further details below on completing the pupil logs; please keep this information for future reference and refer to it when completing the pupil logs at the end of each term**

Please complete all the pupil logs in clear BLOCK CAPITAL letters.

**School name** – Please enter the School name.

**Child's Trial ID Number** – Please enter the Child's Trial ID number.

**Term in which child received an intervention** – Please tick one box:

- Autumn
- Spring
- Summer

**How did the child receive the intervention** – Please tick one box:

- As an individual
- In a pair

**Total number of intervention lessons delivered one-to-one** – Please count the total number of one-to-one intervention lessons which the child **actually** received (for children randomly allocated to individual delivery most lessons will fall in this description).

*Count all the days on which the child received 1-1 Numbers Count support or assessment, including:*

- *the Diagnostic Assessment*
- *all 1-1 Numbers Counts teaching sessions*

*Do not count:*

- *the Sandwell Entry Test or Exit Test*
- *any support given before the Sandwell Entry Test or after the Exit Test*
- *the Classroom Observation Survey*
- *any support given in the child's classroom during a class lesson*

- *more than one session in any day*

**Total number of intervention lessons delivered one-to-two** – Please count the total number of one-to-two intervention lessons which the child **actually** received (for children randomly allocated to pair delivery most lessons will fall in this description except for instance if a child in the pair was absent in which case the lesson should be counted as one-to-one).

*Count all the days on which the child received 1-2 Numbers Count support or assessment, including:*

- *the Diagnostic Assessment*
- *all 1-2 Numbers Counts teaching sessions*

*Do not count:*

- *the Sandwell Entry Test or Exit Test*
- *any support given before the Sandwell Entry Test or after the Exit Test*
- *the Classroom Observation Survey*
- *any support given in the child's classroom during a class lesson*
- *more than one session in any day*

**Child's engagement** – Please indicate your perception of the level of engagement with the intervention on the scale illustrated below. If a child was always engaged we would expect that they would have willingly attended all intervention lessons and tried hard in all their lessons. If a child was not engaged we would expect that they showed reluctance about coming to intervention lessons and did not try hard in their lessons (please tick one box):

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Always engaged           | Mostly engaged           | Sometimes engaged        | Rarely engaged           | Not engaged              |

**Parental engagement** – Please indicate your perception of the level of engagement with the intervention on the scale illustrated below. If a parent or carer was always engaged we would expect that they made every effort to come into school to watch an intervention lesson and that they worked with the child on activities you sent home. If a parent/carer was not engaged we would expect that they took no interest in the child's intervention lessons and did not work with their child on the activities you sent home (please tick one box):

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Always engaged           | Mostly engaged           | Sometimes engaged        | Rarely engaged           | Not engaged              |

**Were all the child's intervention lessons 30 minutes in length** – Please indicate yes or no. If no, please give details, e.g. how many were longer/shorter and why.

**Did the child exit the intervention at 12 weeks** – Please indicate yes or no. If no, please explain why not.

**Next steps for the child after the intervention** – Please detail what has happened to the child at the end of the intervention (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other

Please give details if you tick 'other'

**Any other information about the child** – Please provide any other information about the child which you think could be relevant, for example if the child left the school, in this case please detail at what point the child left and which school they moved to if you know.

**We hope you find these instructions helpful. If you have any further questions about completing the pupil logs please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).**

**Thank you very much for taking the time to complete the pupil logs over the duration of the year.**

**All information provided in the pupil logs will be kept confidential.**



## Appendix 24: Trial 2: Triplets: Pupil log

Please refer to Information Sheet for completing pupil logs

### ECC Evaluation Trial 2: Triplets – Pupil Log

School name:.....

Child's Trial ID:.....

Term in which child received an intervention (please tick one box):

- Autumn
- Spring
- Summer

How did the child receive the intervention?

- As an individual
- In a triplet

Total number of intervention lessons delivered one-to-one

Total number of intervention lessons delivered one-to-three

Total number of intervention lessons delivered one-to-two

Please indicate your perception of the level of engagement with the intervention shown by the **child** using the following scale (please tick one box):

Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Please indicate your perception of the level of engagement with the intervention shown by the **parent/carer** using the following scale (please tick one box):

Always engaged       Mostly engaged       Sometimes engaged       Rarely engaged       Not engaged

Were all the child's intervention lessons 30 minutes in length?

- Yes
- No      If no, please give details (e.g. how many were longer/shorter and why).....

Did the child exit the intervention at 12 weeks?

- Yes
- No      If no, why not?.....

Please detail what has happened to the child at the end of the intervention (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other      If other, please give details.....

Please provide any other information about the child which you think could be relevant:

.....  
.....

## Appendix 25: Trial 2: Triplets: Information for Completing Pupil Logs

### Every Child Counts Evaluation – Trial 2: Triplets

#### Information for completing Pupil Logs

During the course of the year we would like the Numbers Count teacher to complete a log for each child who was originally selected to take part in the trial (even if they leave part-way through) **except for children who were randomly allocated to ‘funded by Barclays’**.

Please do not complete a log for children who are *not* in the trial (for example a log should not be completed for any children who were not selected originally for random assignment or who were randomly allocated as ‘funded by Barclays’).

At the end of each term please complete a pupil log for all children who have received Numbers Count either individually or in a triplet during the term. Please photocopy as many copies of the pupil log form as you need.

**We have provided further details below on completing the pupil logs; please keep this information for future reference and refer to it when completing the pupil logs at the end of each term**

Please complete all the pupil logs in clear BLOCK CAPITAL letters.

**School name** – Please enter the School name.

**Child’s Trial ID** – Please enter the Child’s Trial ID number.

**Term in which child received an intervention** – Please tick one box:

- Autumn
- Spring
- Summer

**How did the child receive the intervention** – Please tick one box:

- As an individual
- In a triplet

**Total number of intervention lessons delivered one-to-one** – Please count the total number of one-to-one intervention lessons which the child **actually** received (for children randomly allocated to individual delivery most lessons will fall in this description).

*Count all the days on which the child received 1-1 Numbers Count support or assessment, including:*

- *the Diagnostic Assessment*
- *all 1-1 Numbers Counts teaching sessions*

Do not count:

- the Sandwell Entry Test or Exit Test
- any support given before the Sandwell Entry Test or after the Exit Test
- the Classroom Observation Survey
- any support given in the child's classroom during a class lesson
- more than one session in any day

**Total number of intervention lessons delivered one-to-three** – Please count the total number of one-to-three intervention lessons which the child **actually** received (for children randomly allocated to triplet delivery most lessons will fall in this description except for instance if a child in the triplet was absent in which case the lesson should be counted as one-to-two, or one-to-one if two children from the triplet were absent).

Count all the days on which the child received 1-3 Numbers Count support or assessment, including:

- the Diagnostic Assessment
- all 1-3 Numbers Counts teaching sessions

Do not count:

- the Sandwell Entry Test or Exit Test
- any support given before the Sandwell Entry Test or after the Exit Test
- the Classroom Observation Survey
- any support given in the child's classroom during a class lesson
- more than one session in any day

**Total number of intervention lessons delivered one-to-two** – Please count the total number of one-to-two intervention lessons which the child **actually** received (this may occur for a child allocated to triplet delivery, if, for instance a child in their triplet was absent).

Count all the days on which the child received 1-2 Numbers Count support or assessment, including:

- the Diagnostic Assessment
- all 1-2 Numbers Counts teaching sessions

Do not count:

- the Sandwell Entry Test or Exit Test
- any support given before the Sandwell Entry Test or after the Exit Test
- the Classroom Observation Survey
- any support given in the child's classroom during a class lesson
- more than one session in any day

**Child's engagement** – Please indicate your perception of the level of engagement with the intervention on the scale illustrated below. If a child was always engaged we would expect that they would have willingly attended all intervention lessons and tried hard in all their lessons. If a child was not engaged we would expect that they showed reluctance about coming to intervention lessons and did not try hard in their lessons (please tick one box):

Always engaged

Mostly engaged

Sometimes engaged

Rarely engaged

Not engaged

**Parental engagement** – Please indicate your perception of the level of engagement with the intervention on the scale illustrated below. If a parent or carer was always engaged we would expect that they made every effort to come into school to watch an intervention lesson and that they worked with the child on activities you sent home. If a parent/carer was not engaged we would expect that they took no interest in the child’s intervention lessons and did not work with their child on the activities you sent home (please tick one box):

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Always engaged           | Mostly engaged           | Sometimes engaged        | Rarely engaged           | Not engaged              |

**Were all the child’s intervention lessons 30 minutes in length** – Please indicate yes or no. If no, please give details, e.g. how many were longer/shorter and why.

**Did the child exit the intervention at 12 weeks** – Please indicate yes or no. If no, please explain why not.

**Next steps for the child after the intervention** – Please detail what has happened to the child at the end of the intervention (please tick one box).

- the child has returned to normal class teaching
- the child has been referred for SEN assessment
- other

Please give details if you tick ‘other’

**Any other information about the child** – Please provide any other information about the child which you think could be relevant, for example if parental consent was withdrawn, or if the child left the school, in this case please detail at what point the child left and which school they moved to.

**We hope you find these instructions helpful. If you have any further questions about completing the pupil logs please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).**

**Thank you very much for taking the time to complete the pupil logs over the duration of the year.**

**All information provided in the pupil logs will be kept confidential.**

## Appendix 26: Information Letter for Independent Testers

17.12.09

Dear Independent Tester

Thank you very much for agreeing to be an independent tester in the Evaluation of Every Child Counts, which is being conducted by the University of York and Durham University.

In this pack you will find everything you need for conducting the independent testing in the week beginning 4<sup>th</sup> January 2010.

Please find a list of all the schools you have been assigned to visit and the dates and times of your visit. For each school I have provided the address and names and contact details. There is also a list of all the children who should be tested at each school and a place for you to mark if any were absent from testing. In each school the children should be tested in two groups. Please divide the list in half and ask the teaching assistant or Numbers Count teacher who is helping you at each school to collect the first set of children. Please conduct the testing as described in the testing protocol with each group of children.

For each school I have provided two sets of labels one for the Progress in Maths 6 answer book and one for the PIPs Quiz. The label with the full name on is purely for your reference and should not be used. The label with the Child's Trial ID and first name should be attached to the test paper. The children do not need to write anything on the front of the papers.

Please also find enclosed in this pack:

A Progress in Maths 6 Guidebook

Enough copies of the Progress in Maths 6 answer book for all the children you will be testing  
A Progress in Maths 6 Group Record Sheet, one for each school you are going to.

Enough copies of the PIPs Quiz for all the children you will be testing.

Testing Protocol

Safe Guarding Procedure

**When you visit each school please remember to take your Criminal Records Bureau (CRB) check with you. Please also take photographic evidence of your identity, for example a current driving licence or passport. The school may ask to see these documents.**

**Arrangements for returning the test data to the University of York**

After you have completed all the testing, you should mark the Progress in Maths 6 answer books and enter the children's scores on the Progress in Maths 6 Group Record Sheet as detailed in the Guidebook. A Group Record Sheet should be completed for each school. The children should only be identified by their Trial ID; please do not put their names on the Group Record Sheet. Please take a photocopy of each school's Group Record Sheet and keep it in a safe place. Please post all the schools original Group Record Sheets to the University of York using the FREEPOST A4 envelope provided in this pack. Once we have received the Group Record Sheets in the post, we will inform you and then please shred the photocopy you kept.

You also need to return all the completed Progress in Maths 6 answer books and the completed PIPs Quizzes (please note you do not need to mark the PIPs Quiz). Please place an elastic band around each school's set of completed test papers and put the register of the children's attendance on the top of the pile. Please make sure you cut off the children's names. It is very important that all the data are anonymous.

Each school's pile of test papers should be placed back into the box in which this information pack arrived. I have provided a new label with the University of York address on; this should be stuck on the top of this box. DHL will then collect the box from you on the day I have arranged with you.

**If you need to contact somebody during the independent testing week, please contact Andy Wiggins who will be overseeing arrangements.**

**Tel: 07909 198635**

**Email: [andy.wiggins@durham.ac.uk](mailto:andy.wiggins@durham.ac.uk)**

I hope this information is clear. Again many thanks for agreeing to be an independent tester.

Yours sincerely

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth  
ECC Trial Co-ordinator  
University of York  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

## Appendix 27: Independent Testing Protocol

### Protocol for independent testing of pupils as part of the ECC evaluation

Much of the information on the PIM 6 test is in the GL 'At a Glance Guide' which comes with the testing packs.

#### *Preparing for the test*

For the testing, PIPS Year 2 attitude questions and GL Assessment's Progress in Maths (PIM) 6 test will be used. These will be paper-based tests.

If possible, use a room for testing that does not have helpful or distracting wall charts, and where pupils will not be disturbed. Ensure that the pupils are separated from each other so that they cannot copy. The testing will be typically carried out in groups of 6 pupils (although more than 6 is fine) with a familiar Teaching Assistant or Numbers Count Teacher present. Each pupil will need pencil with a rubber and rulers available on request. Calculators should not be used.

Each pupil will need the PIPS questions and the PIM6 booklet, and the tester will need a copy too, along with the 'At a Glance Guide' for PIM6.

The tester will also need the name and Trial ID for each of the children. The University of York has provided Trial ID stickers which should be stuck onto the front of both tests.

It is expected that the testing will take about 40 minutes.

During the testing, it is recommended that the tester remains standing, so that he/she can observe whether the children are on the correct question and to intervene if necessary.

Also recommended is that the tester always has showing to the pupils the page of the attitude questionnaire or test booklet which the pupils should be on, so that the tester can direct their attention if necessary, and say "we are on this question now". They can also read the directions for the testing behind the questionnaire/booklet.

#### *Start of the testing*

Begin the session with the following:

*"Hello everybody. My name is ..... and I would like to find out what you think about your lessons at school and we are going to do some maths questions. Let's start with what you think about maths, reading and school. Could you look at this sheet please?"*

Hold up a copy of the attitude questions. Then say:

*"For these questions, you are going to put a tick through the face which you think shows how you feel most of the time. The first one says 'I like eating sweets'. If you like eating sweets most of the time, you would put a tick through the happy face. If you like eating sweets some of the time, you would put a tick through the face in the middle. If you don't like eating sweets, you would put a tick through the sad face. Someone has already put a tick through the middle face for this question."*

Then say:

*"Now let's look at the other questions.. The first one says 'I like counting'. If you like counting most of the time, put a tick through the happy face. If you like counting some of the time, put a tick through the middle face. If you don't like counting, put a tick through the sad face."*

If everyone is clear about what to do, continue reading out the statement about maths, reading and school. Ensure that the pupils are all ticking the correct question. Read the following:

I look forward to sums  
I like reading  
I look forward to reading  
I enjoy school  
I like the lessons

Say:

*“Well done everyone, now can you have a look at the green booklet?”*

*Administering the PIM 6 test*

Hold up the PIM6 test booklet. Then read out the following:

*“I am going to read out some maths questions now. I will read each question once, but if you want me to read a question one more time, put your hand up. We will then move on to the next question. Don’t worry if you can’t do a question – some questions are difficult, so have a guess if you can, then move quickly on to the next question. If you make a mistake, then just cross it out, and write your answer again. Is everyone ready? Let’s look at question 1 with the trees.”*

Read the questions from the ‘At a Glance Guide’. For each question, simply say the number of the question and then the text. Do not read out the title of the question (e.g. Chop, Sails etc.), but remind the pupils at times that “we are on the question with ....” to keep their attention directed. If necessary, say to the pupils:

*“Can everybody just look here ... We are on this question now.”*

All the questions will be read aloud by the tester. Unless children put their hand up, move on to the next question when the children have had sufficient time (an average on 1minute per question may be sufficient). The emphasis should be on moving through the questions in a fairly brisk manner, rather than leaving children to worry about questions. When appropriate, say:

*“When you have finished the question, turn the next page to the next question.”*

This will also help to move the pupils on through the test.

For some questions, the test booklet will be specifically referred to for the pupils (namely questions 6, 7, 20).

Pupils can be provided with some assistance with language – meaning of individual words can be provided, or even the question can be read in pupils’ first language. In the latter case, assistance from the TAs will be required.

*At the end of the test*

Please read out:



*“That is the end of the test everyone. Well done to you all for doing so well. If you can leave everything on the table in front of you, then you can go back to class with (the Teaching Assistant’s or the Numbers Count Teacher’s name).”*

Please ensure that all the details on the front cover of the test are in place before putting the test booklets away.

For marking of the booklets, please refer to the PIM6 Teacher’s guide pages 32 to 33. The record Sheet for each school can then be subsequently filled in and returned to the University of York.

## **Appendix 28: Safe Guarding Procedure**

### **National Evaluation of Every Child Counts**

#### **Trial 1 and 2 Safe guarding procedure**

Testers will visit each Trial 1 and Trial 2 school to test each child participating in the trials using two tests: the GL Assessment (NFER) Progress in Maths test and the PIPS test. In Trial 1 the independent testing will be conducted on one occasion (January 2010); in Trial 2 the independent testing will occur on two occasions (January 2010 and April 2010).

As the research team we have obligations to meet both the legal requirements, as detailed in “The Vetting and Barring Scheme Guidance, October 2009”, and to satisfy ourselves that the testers are both competent and suitable people to carry out the testing.

Each school will provide a suitable area for the testing to be carried out, and a teaching assistant, or other suitable adult, to support the testing. This person will have a CRB check with the host school. On the day of the testing they will collect and return the children from their class, and will be with children whilst the testing is being carried out.

The testers will not have any unsupervised contact with any children whilst at the school, and will not see any of the children more than twice. They will have received training in conducting the testing. They will have a CRB check, although not necessarily with York or Durham University, and this will be available to be inspected by the schools prior to them entering any school to carry out the testing.


This procedure was agreed by the Trial Team on: 12.11.09

This procedure was agreed by the University of York Humanities and Social Sciences Ethics Committee on: 16.12.2009

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See: [http://www.isa-gov.org.uk/PDF/VBS\\_Guidance.pdf](http://www.isa-gov.org.uk/PDF/VBS_Guidance.pdf)

## Appendix 29: PIPs Quiz

|                      |                           |  |   |   |
|----------------------|---------------------------|--|---|---|
| EXAMPLE              | I like eating sweets      |    |    |    |
| <b>About Maths</b>   |                           |  |   |   |
| 1                    | I like counting           |    |    |    |
| 2                    | I look forward to sums    |    |    |    |
| <b>About Reading</b> |                           |  |   |   |
| 3                    | I like reading            |  |  |  |
| 4                    | I look forward to reading |  |  |  |
| <b>About School</b>  |                           |  |   |   |
| 5                    | I enjoy school            |  |  |  |
| 6                    | I like the lessons        |  |  |  |

## Appendix 30: Independent Testing Letter to Schools

08.12.09

Dear [Head Teacher] and [Numbers Count teacher]

### ECC Evaluation – Independent Testing

As detailed in the previous letter, all the children taking part in the trial need to be tested by an independent tester during the first week back after the Christmas break (week commencing 4<sup>th</sup> January 2010).

The independent tester will be visiting your School on:

**[Day and Time]**

Each child taking part in the trial will be assessed using the GL Assessment (NFER) Progress in Maths and the PIPS attitudinal assessments. The testing will be done in small groups of four children at a time, repeated to cover all children in the trial.

Please could we ask you to provide an appropriate room in which the testing can be conducted. If someone from your school would also help with the logistics of collecting children and staying with them during the testing that would be very much appreciated.

If the day and time suggested above is not convenient for your School, please can you let us know as soon as possible and by Friday 11<sup>th</sup> December at the latest and we will try to organise another time for you. Please be aware that there is very little flexibility and we would have to find another school that would be happy to swap with you in order to make any changes.

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth  
ECC Trial Co-ordinator

University of York  
Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158

**Appendix 31: Independent Testing Confirmation Letter to  
Schools (January Testing)**

**ECC EVALUATION – INDEPENDENT TESTING  
CONFIRMATION**

**[INDEPENDENT TESTERS NAME] will be visiting  
[SCHOOL NAME] on [DAY] at [TIME] to conduct the  
independent testing required for the Every Child  
Counts Trial.**

The independent tester will test all children in the trial in two groups (rather than in groups of 4 as previously stated) using the GL Progress in Maths 6 Test and the PIPs Quiz. Please ensure an adequately sized room is provided. It is very important that the independent tester does not know which children have been receiving Numbers Count this term so please refrain from talking to them about this.

If you need to contact somebody about the independent testing during the week beginning 4<sup>th</sup> January 2010 please contact Andy Wiggins who will be overseeing the arrangements

Tel: 07909 198635

Email: [andy.wiggins@durham.ac.uk](mailto:andy.wiggins@durham.ac.uk)

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth

ECC Trial Co-ordinator

University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## Appendix 32: Cover Letter Data Collection Form D

[School Name]

22 January 2010

Dear [Numbers Count teacher name]

### **ECC Evaluation: Data Collection Form D**

Thank you very much for all your help with the independent testing at the beginning of this term, especially with the snowy weather conditions!

In order to conduct the analysis we need to know the date of birth of all the children in the trial and also whether they receive free school meals or not. I have enclosed a data form with this letter/email which I would be very grateful if you could complete and return as soon as possible.

Please return the Data Form by email or fax or in the FREEPOST envelope provided as soon as possible. It is urgent that we receive this information in order that we can conduct the trial analysis. We would be extremely grateful if you could send this before Friday 29<sup>th</sup> January 2010.

Many thanks

Hannah

Hannah Ainsworth  
ECC Trial Co-ordinator

University of York  
York  
YO10 5DD

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158



## Appendix 34: Spring Term Information Pack

09.03.10

Dear Head Teacher and Numbers Count teacher

### ECC Evaluation – Spring Term Information Pack

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts.

This letter contains information about a number of requirements for the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### Sandwell Testing

As you are aware **ALL** children taking part in the trial need to be tested using Sandwell A from the revised SENTR package at the end of this term, regardless of whether they received Numbers Count this term or not. As in September and December, for the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DCSF for teaching assistant time as detailed in a previous letter. Testing can be completed in the last week of term. **However, all testing should be completed before the Easter Holidays.**

**Please complete and return Data Form E (included in this pack) before the Easter Holidays by email, fax or Freepost.** Thank You.

#### Pupil Logs

As detailed previously, over the course of the year we would like you to complete a pupil log for every child taking part in the evaluation. A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

Please return the completed Pupil logs in the Freepost envelope provided or by fax or send electronic copies by email **before the Easter holidays**. A list of all the children's names and their trial IDs are included in this pack for your reference.

#### Strengths and Difficulties Questionnaire (Wider outcomes test)

We would also like to ask each school to help us collect wider impact information on each of the children taking part in the trial. This is not compulsory and we are aware that some schools cannot do this; however, if you feel able, we would be very grateful if a Strengths and Difficulties Questionnaire could be completed for **ALL** children in the trial by the Numbers Count teacher in collaboration with the Year 2 teacher who teaches the child in question. We would also be very grateful if you could also ask parents/carers of **ALL** children taking part in the trial to complete a Strengths and Difficulties Questionnaire. We are happy for you to do this with parents when they come into school or in any way that is convenient for you and the parents. If you are able to send on all the completed questionnaires to us in the Freepost envelope provided or by fax before the Easter holidays that would be very helpful. A copy of the Strengths and Difficulties Questionnaire is included in this pack; please make as many photocopies as you need.



## Independent Testing

As in January, as soon as possible after the Easter holidays, we will be sending an independent tester to visit the school and test **ALL** the children in the trial using the GL Assessment (NFER) Progress in Maths 6 and the PIPS attitudinal assessments. The current arrangements for your school are as follows:

[NAME] will be visiting [School] on [Day] at [TIME]

If this is not convenient please get in contact with Hannah and we will try and arrange a swap for you.

We would very much appreciate it if you would be able to provide an appropriate room in which the testing can be conducted (this can be the Numbers Count room if there is no other room available), and also if someone from your school would help with the organisation (this can be the Numbers Count teacher if there is nobody else available). We will be paying schools £50 directly for your help with this.

**We are aware there is a lot of information here, as always please contact the trial co-ordinator (Hannah) should you require any more information or clarification.**

Just to update you, Carole Torgerson (ECC evaluation joint Chief Investigator) will be leaving the University of York on 31st March and moving to the University of Birmingham, where she will retain an interest in the evaluation as a methodologist. Professor David Torgerson will take over as joint Chief Investigator (with Dr Andy Wiggins) from April 1st. Hannah Ainsworth will remain as Trial Co-ordinator.

Many thanks

ECC Evaluation Team

Carole Torgerson (University of York until 31st March) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
David Torgerson (University of York, York Trials Unit) (new joint Chief Investigator)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

## Appendix 35: Data Collection Form E

### ECC Trial [INSERT TRIAL] Data Collection Form E

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

Please test all children originally involved in the Trial if they remain at your school, using the Sandwell A test. Please return all results before the Easter holidays.

| Child's Trial ID | Sandwell A Test Score (March/April) |
|------------------|-------------------------------------|
| INSERT           |                                     |
| INSERT           |                                     |
|                  |                                     |
|                  |                                     |
|                  |                                     |
|                  |                                     |
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|                  |                                     |
|                  |                                     |

## **Appendix 36: Independent Testing Confirmation Letter to Schools (April Testing)**

### **ECC EVALUATION – INDEPENDENT TESTING CONFIRMATION**

**[NAME] will be visiting [SCHOOL] on [DATE] at [TIME] to conduct the independent testing required for the Every Child Counts Trial.**

The independent tester will test all children in the trial in two groups using the GL Progress in Maths 6 Test and the PIPs Quiz. Please ensure an adequately sized room is provided. It is very important that the independent tester does not know which children have been receiving Numbers Count this term so please refrain from talking to them about this.

If you need to contact somebody about the independent testing please contact **Hannah Ainsworth** who will be overseeing the arrangements

**Tel: 01904 328158**

**Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)**

Many thanks

ECC Evaluation Team

Carole Torgerson and Andy Wiggins (joint Chief Investigators) and Hannah Ainsworth (Trial Co-ordinator)

Hannah Ainsworth

ECC Trial Co-ordinator

University of York

Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)

Tel: 01904 328158

## **Appendix 37: Trial 2: Pairs: Summer Term Information Pack**

23.06.10

Dear Head Teacher and Numbers Count teacher

### **ECC Evaluation – Summer Term Information Pack**

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts. We are now almost at the end of the trial and this letter contains information about the last requirements of the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### **Sandwell Testing**

As you are aware **ALL** children originally selected to take part in the trial need to be tested using **Sandwell B** from the revised SENTR package at the end of this term, regardless of whether they received Numbers Count or not. For the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DfE for teaching assistant time as detailed in a previous letter. Testing should be completed as near to the end of term as is possible. **All testing should be completed by Monday 19<sup>th</sup> July 2010.**

**Please complete and return Data Form F (included in this pack) by Monday 19<sup>th</sup> July 2010 to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided.** Thank You (Please note new Fax and Address details below).

#### **Attendance Rate**

We would be grateful if you could provide the attendance rate for **ALL** children originally selected to take part in the trial for the Academic Year 2009/1010. For children who have left the school; if possible please provide their attendance rate up to the point they left your school and state the date they left. Please provide this information as a percentage in the column provided on **Data Form F**.

#### **KS1 Results**

Please could you provide the KS1 results in Maths, English (reading and writing) and Science for **ALL** children originally selected to take part in the Trial as a final level (e.g. 2c). Please provide this information on **Data Form F**.

#### **Pupil Logs**

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

Please return the completed Pupil logs to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided by **Monday 19<sup>th</sup> July 2010**. A list of all the children's names and their trial IDs are included in this pack for your reference.

## **Trial 2 Survey: Part B**

Please would all Numbers Count teachers complete the Trial 2: Pairs Survey: Part B included in this pack. Please return to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided by **Monday 19<sup>th</sup> July 2010**.

We would like to take this opportunity to thank you very much for your involvement in this important independent evaluation of Every Child Counts. The trial has been very successful thanks to the hard work of all the Schools taking part. We will provide you with a summary of the trial results as soon as these have been cleared by the Department for Education.

**As always please contact the trial coordinator (Hannah) should you require any more information or clarification.**

Many thanks

ECC Evaluation Team

David Torgerson (University of York) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
Carole Torgerson (University of Birmingham)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

**Hannah Ainsworth  
ECC Trial Coordinator**

**University of York  
Heslington  
York  
YO10 5DD**

**Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158  
Fax: 01904 321387**

## **Appendix 38: Trial 2: Triplets: Summer Term Information Pack**

23.06.10

Dear Head Teacher and Numbers Count teacher

### **ECC Evaluation – Summer Term Information Pack**

Thank you very much for your continued involvement in the independent evaluation of Every Child Counts. We are now almost at the end of the trial and this letter contains information about the last requirements of the evaluation which need to be conducted in the coming weeks. Please also find enclosed with this letter all the paperwork you will need.

#### **Sandwell Testing**

As you are aware **ALL** children originally selected to take part in the trial need to be tested using **Sandwell B** from the revised SENTR package at the end of this term, regardless of whether they received Numbers Count or not. For the purposes of the evaluation, Sandwell testing can be conducted by the Numbers Count teacher, the link teacher or by a teaching assistant. Additional funding can be claimed from the DfE for teaching assistant time as detailed in a previous letter. Testing should be completed as near to the end of term as is possible. **All testing should be completed by Monday 19<sup>th</sup> July 2010.**

**Please complete and return Data Form F (included in this pack) by Monday 19<sup>th</sup> July 2010 to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided.** Thank You (Please note new Fax and Address details below).

#### **Attendance Rate**

We would be grateful if you could provide the attendance rate for **ALL** children originally selected to take part in the trial for the Academic Year 2009/1010. For children who have left the school; if possible please provide their attendance rate up to the point they left your school and state the date they left. Please provide this information as a percentage in the column provided on **Data Form F**.

#### **KS1 Results**

Please could you provide the KS1 results in Maths, English (reading and writing) and Science for **ALL** children originally selected to take part in the Trial as a final level (e.g. 2c). Please provide this information on **Data Form F**.

#### **Pupil Logs**

**At the end of this term we would like you to *only* complete a pupil log for each child who has received Numbers Count this term.**

A copy of the Pupil Log is included in this pack; please make as many photocopies as you need or complete it electronically. An information sheet with detailed information about completing the pupil logs is also included in this pack.

Please return the completed Pupil logs to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided **by Monday 19<sup>th</sup> July 2010**. A list of all the children's names and their trial IDs are included in this pack for your reference.

## **Trial 2 Survey: Part B**

Please would all Numbers Count teachers complete the Trial 2: Triplets Survey: Part B included in this pack. Please return to Hannah Ainsworth by email, fax or in the stamped addressed envelope provided **by Monday 19<sup>th</sup> July 2010**.

We would like to take this opportunity to thank you very much for your involvement in this important independent evaluation of Every Child Counts. The trial has been very successful thanks to the hard work of all the Schools taking part. We will provide you with a summary of the trial results as soon as these have been cleared by the Department for Education.

**As always please contact the trial coordinator (Hannah) should you require any more information or clarification.**

Many thanks

ECC Evaluation Team

David Torgerson (University of York) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
Carole Torgerson (University of Birmingham)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

**Hannah Ainsworth  
ECC Trial Coordinator**

**Department of Health Sciences  
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**Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk)  
Tel: 01904 328158  
Fax: 01904 321387**

# Appendix 39: Trial 2: Pairs: NC Teacher Survey Part B

## Every Child Counts Evaluation

### Trial 2: Pairs Survey: Part B

#### To be completed at the end of Trial 2: Pairs (Summer Term July 2010)

Thank you very much for taking part in Trial 2: Pairs. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you have any questions about this survey please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

#### PLEASE COMPLETE IN BLOCK CAPITALS

Name of School.....

Your name.....

Were all children taught in the term to which they were randomly allocated?

- Yes
- No If no, which children were not taught in the allocated term and why?.....

At this point, in general, would you prefer to deliver Numbers Count to an individual child or to a pair of children?

- I would prefer to deliver Numbers Count to an individual child
- I would prefer to deliver Numbers Count to pairs of children
- I do not have any preference.

Please provide any reasons for your chosen preference.....

What were the benefits for your school in taking part in this trial?.....

What were the challenges for your school in taking part in this trial?.....

**Continued Overleaf...**



Do you have any other comments about taking part in the trial?.....

.....  
.....

Would you take part in another trial?

- Yes
- No

Is there any advice can you offer us and the DfE about conducting future trials?.....

.....

Would the Headteacher of your school be happy for us to add your school's name and contact details to a register that we are compiling, of schools potentially interested in taking part in further trials?

- Yes
- No

*Thank you for completing this survey. Please return by email, fax or in the stamped addressed envelope provided to Hannah Ainsworth (Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) Fax: 01904 321387)*

# Appendix 40: Trial 2: Triplets: NC Teacher Survey Part B

## Every Child Counts Evaluation

### Trial 2: Triplets Survey: Part B

To be completed at the end of Trial 2: Triplets (Summer Term July 2010)

Thank you very much for taking part in Trial 2: Triplets. We would be very grateful if you would complete this short survey. This survey should be completed by the Numbers Count teacher. The information you give will be treated in the strictest confidence. If you have any questions about this survey please contact the ECC Trial 2 Co-ordinator, Hannah Ainsworth ([hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) or 01904 328158).

PLEASE COMPLETE IN BLOCK CAPITALS

Name of School.....

Your name.....

Were all children taught in the term to which they were randomly allocated?

- Yes
- No If no, which children were not taught in the allocated term and why?.....

.....

At this point, in general, would you prefer to deliver Numbers Count to an individual child or to a triplet of children?

- I would prefer to deliver Numbers Count to an individual child
- I would prefer to deliver Numbers Count to triplets of children
- I do not have any preference.

Please provide any reasons for your chosen preference.....

.....

.....

What were the benefits for your school in taking part in this trial?.....

.....

What were the challenges for your school in taking part in this trial?.....

.....

**Continued Overleaf...**

Do you have any other comments about taking part in the trial?.....

.....

.....

Would you take part in another trial?

Yes

No

Is there any advice can you offer us and the DfE about conducting future trials?.....

.....

Would the Headteacher of your school be happy for us to add your school's name and contact details to a register that we are compiling, of schools potentially interested in taking part in further trials?

Yes

No

*Thank you for completing this survey. Please return by email, fax or in the stamped addressed envelope provided to Hannah Ainsworth (Email: [hrp500@york.ac.uk](mailto:hrp500@york.ac.uk) Fax: 01904 321387)*

## Appendix 41: Data Collection Form F

### ECC Trial [INSERT TRIAL] Data Collection Form F

School Name [INSERT SCHOOL NAME]

Numbers Count Teacher [INSERT NC TEACHER NAME]

- Please test **ALL** children originally involved in the Trial if they remain at your school, using the **Sandwell B test**.
- Please provide the attendance rate for each child for the academic year 2009/2010, given as a percentage. For children who have left the school; if possible please provide their attendance rate up to the point they left your school and state the date they left.
- Please provide each child's KS 1 results in Maths, English (reading and writing) and Science as a final level (e.g. 2c)
- **Please return all results before 19<sup>th</sup> July 2010.**

Thank you

| Child's Trial ID | Sandwell B Raw Test Score (July 2010) | Attendance Rate 2009/2010 (%) | KS 1 Results |         |         |         |
|------------------|---------------------------------------|-------------------------------|--------------|---------|---------|---------|
|                  |                                       |                               | Maths        | Reading | Writing | Science |
| INSERT           |                                       |                               |              |         |         |         |
| INSERT           |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |
|                  |                                       |                               |              |         |         |         |

## **Appendix 42: Thank you Letter to Schools**

23rd July 2010

Dear Head teacher and Numbers Count teacher

### **ECC Evaluation**

We have now come to the end of the ECC Evaluation. Thank you very much for submitting the final data needed for the evaluation this week.

We wanted to take this opportunity to say a big thank you to all the Schools, Head teachers, Numbers Count teachers and children who have been involved in the Independent Evaluation of Every Child Counts. We know there has been additional work for you all and we are very grateful for all the extra effort and hard work you have put in to make this important evaluation possible.

The evaluation has been very successful and will be able to provide important results.

We will be sending all Schools who have taken part in the evaluation a summary of the results, once the final report we submit to the Department for Education has been formally accepted.

We hope you have a lovely Summer break,

Yours sincerely

ECC Evaluation team

David Torgerson (University of York) (joint Chief Investigator)  
Andy Wiggins (Durham University) (joint Chief Investigator)  
Carole Torgerson (University of Birmingham)  
and Hannah Ainsworth (University of York) (Trial Coordinator)

## Appendix 43: Trial 2: Pairs: Summary of findings from pupil logs

Table 1: Summary of information collected on the pupil logs

| Summary   | Autumn  |      |       |      | Spring  |      |       |      | Summer  |      |
|---|---------|------|-------|------|---------|------|-------|------|---------|------|
|   | Singles |      | Pairs |      | Singles |      | Pairs |      | Singles |      |
|   | N       | %    | N     | %    | N       | %    | N     | %    | N       | %    |
| <b>Intervention received</b>                        |         |      |       |      |         |      |       |      |         |      |
| Autumn  | 15      | 100  | 58    | 100  | 0       | 0    | 0     | 0    | 0       | 0    |
| Spring  | 0       | 0    | 0     | 0    | 13      | 100  | 54    | 100  | 0       | 0    |
| Summer  | 0       | 0    | 0     | 0    | 0       | 0    | 0     | 0    | 35      | 100  |
| Total   | 15      | 100  | 58    | 100  | 13      | 100  | 54    | 100  | 35      | 100  |
| <b>Level of engagement by child</b>                 |         |      |       |      |         |      |       |      |         |      |
| Not engaged   | 0       | 0    | 0     | 0    | 0       | 0    | 0     | 0    | 0       | 0    |
| Rarely engaged                                      | 0       | 0    | 0     | 0    | 0       | 0    | 0     | 0    | 0       | 0    |
| Sometimes engaged                                   | 3       | 20   | 5     | 8.6  | 0       | 0    | 6     | 11.1 | 3       | 8.8  |
| Mostly engaged                                      | 5       | 33.3 | 25    | 43.1 | 7       | 53.8 | 26    | 48.1 | 12      | 35.3 |
| Always engaged                                      | 7       | 46.7 | 28    | 48.3 | 6       | 46.2 | 22    | 40.7 | 19      | 55.9 |
| Total   | 15      | 100  | 58    | 100  | 13      | 100  | 54    | 100  | 34      | 100  |
| <b>Level of engagement by parent/carer</b>          |         |      |       |      |         |      |       |      |         |      |
| Not engaged   | 0       | 0    | 9     | 15.8 | 2       | 15.4 | 6     | 11.1 | 4       | 12.1 |
| Rarely engaged                                      | 4       | 26.7 | 13    | 22.8 | 0       | 0    | 8     | 14.8 | 7       | 21.2 |
| Sometimes engaged                                   | 2       | 13.3 | 9     | 15.8 | 8       | 61.5 | 20    | 37   | 6       | 18.2 |
| Mostly engaged                                      | 6       | 40   | 19    | 33.3 | 3       | 23.1 | 14    | 25.9 | 9       | 27.3 |
| Always engaged                                      | 3       | 20   | 7     | 12.3 | 0       | 0    | 6     | 11.1 | 7       | 21.2 |
| Total   | 15      | 100  | 57    | 100  | 13      | 100  | 54    | 100  | 33      | 100  |
| <b>Were all NC lessons 30 mins?</b>                 |         |      |       |      |         |      |       |      |         |      |
| Yes   | 13      | 86.7 | 51    | 87.9 | 12      | 92.3 | 53    | 98.1 | 30      | 88.2 |
| No  | 2       | 13.3 | 7     | 12.1 | 1       | 7.7  | 1     | 1.9  | 4       | 11.8 |
| Total   | 15      | 100  | 58    | 100  | 13      | 100  | 54    | 100  | 34      | 100  |
| <b>Did the child exit NC at 12 weeks?</b>           |         |      |       |      |         |      |       |      |         |      |
| Yes   | 14      | 93.3 | 52    | 92.9 | 9       | 69.2 | 41    | 77.4 | 28      | 84.8 |
| No  | 1       | 6.7  | 4     | 7.1  | 4       | 30.8 | 12    | 22.6 | 5       | 15.2 |
| Total   | 15      | 100  | 56    | 100  | 13      | 100  | 53    | 100  | 33      | 100  |
| <b>What happened to the child at the end of NC?</b> |         |      |       |      |         |      |       |      |         |      |
| Returned to normal class teaching                   | 12      | 80   | 51    | 92.7 | 10      | 76.9 | 47    | 88.7 | 26      | 81.3 |
| Referred for SEN assessment                         | 2       | 13.3 | 4     | 7.3  | 2       | 15.4 | 3     | 5.7  | 4       | 12.5 |
| Other   | 1       | 6.7  | 0     | 0    | 1       | 7.7  | 3     | 5.7  | 2       | 6.3  |
| Total   | 15      | 100  | 55    | 100  | 13      | 100  | 53    | 100  | 32      | 100  |

**Table 2: Summary of type of delivery and term the intervention was actually received**

| Randomised method and term of delivery |        | Method of delivery received |           | Total |
|--|--------|-----------------------------|-----------|-------|
|  |        | Singles                     | Pairs     |       |
| Singles                                | Autumn | 15 (100)                    | 0 (0)     | 15    |
|  | Spring | 13 (100)                    | 0 (0)     | 13    |
|  | Summer | 34 (100)                    | 0 (0)     | 34    |
|  | Total  | 62                          | 0         | 62    |
| Pairs                                  | Autumn | 2 (3.4)                     | 56 (96.6) | 58    |
|  | Spring | 0 (0)                       | 48 (100)  | 48    |
|  | Total  | 2                           | 104       | 106   |

**Table 3: Total number of NC lessons received**

| Actual delivery   | Randomised term and method of delivery |             |               |             |             |
|-------------------|--|-------------|---------------|-------------|-------------|
|                   | Autumn                                 |             | Spring        |             | Summer      |
|                   | Singles                                | Pairs       | Singles       | Pairs       | Singles     |
| <b>1 to 1</b>     |  |             |               |             |             |
| No of responses   | 15                                     | 22          | 12            | 20          | 33          |
| Mean (sd)         | 41.4 (4.8)                             | 6.4 (8.7)   | 41.3 (10.4)   | 8.5 (12.6)  | 41.0 (7.8)  |
| Median (min, max) | 41 (30, 47)                            | 2 (1, 38)   | 42.5 (12, 52) | 3.5 (1, 39) | 39 (29, 54) |
| <b>1 to 2</b>     |  |             |               |             |             |
| No of responses   | 2                                      | 57          | 1             | 50          | 9           |
| Mean (sd)         | 2 (0)                                  | 40.6 (6.1)  | 2             | 41.3 (7.4)  | 3 (1.7)     |
| Median (min, max) | 2 (2, 2)                               | 43 (26, 52) | 2             | 42 (25, 52) | 3 (1, 7)    |

**Results:**

- No children were rarely or not engaged with NC. However there was a more diverse spread of parental engagement with NC.
- The majority of lessons were 30 minutes in length.
- The majority of children exited the NC intervention at the end of the term they received the intervention. A lower percentage of children taught as singles (69.2) and pairs (77.4) in the Spring term exited the intervention at the end of the term.
- The majority of children returned to normal class teaching at the end of each term.
- No children were taught in a different term to the term they were originally randomly allocated to.
- Two children received the intervention individually although they were randomly allocated to pairs delivery of NC.

## Appendix 44: Trial 2: Pairs: Summary of the teacher surveys

### Teacher Survey Part A

Twenty-five schools took part in Trial 2: Pairs. Eight Numbers Count (NC) teachers returned the Teacher Survey Part A.

Fourteen of the 15 NC teachers were female. Seven of the NC teachers had other roles in the school as well as being the Numbers Count teacher including; PPA Cover Teacher; Assistant Head for KS1 and Early Years, and FS; EAL/EMA Co-ordinator; Assistant Head (Middle Phase); Year 4 Teacher and Team Manager; Reading Recovery Teacher; School leadership team.

The mean number of years teaching experience of the NC teachers was 20.53 (SD 10.99, min 4, max 38)

When asked their highest qualification 2 teachers reported it to be a PGCE, 8 reported it to be a bachelor's degree, 4 reported it to be a teaching diploma/teaching certificate and one reported it to be other. Three teachers reported they had further qualifications relating to teaching children with special educational needs, one teacher reported they had further qualifications relating to teaching mathematics and two teachers reported they had other relevant qualifications.

When asked if they had a preference for how Numbers Count should be delivered, 5 teachers expressed a preference for individual delivery of Numbers Count, 1 teacher expressed a preference for delivery Numbers Count to pairs of children and 9 teachers had no preference.

The teachers reasons for preferring individual delivery of Numbers Count included:

*“Considering the diagnostic sessions and individual personalities it is easier to determine individual strengths when on a 1:1 basis. I worry that more 'vocal' children may dominate sessions”*

*“Two children assessed to be at the same level (Sandwell) can still have very different needs”*

*“The programme is very specific to an individual's needs and strengths, it is very unlikely that 2 children will have the same needs and strengths. They learn at a different pace”*

*“You can focus upon individual needs. When working in groups of 2 before (NC children) they were at different levels and it was difficult to teach for 2 children”*

*“This method of delivery avoids distractions and maximises concentrations in context of the pupil”*

The teacher reason for preferring to deliver Numbers Count to pairs of children included:

*“Effective use of time. Think it's socially less isolating. Children become less dependent more fun! But sometimes a child will need 1:1”*

The reasons for having no preference included:

*“Some pupils work better 1:1 and others respond better with another pupil there”*

*“Not as yet delivered Numbers Count to pairs only individuals - interested in the result”*

*“Delivering lessons to an individual provides opportunity to focus only on the child and get to know the child really well and to pair would give them more confidence”*



*and make them feel less intimidated by the teacher and offer teacher opportunity to see how the children relate to peers”*

*“Can't say as yet, as I have not taught any pairs of children, so are unable to compare this to delivering NC to an individual child”*

*“I personally don't have a specific preference however I have seen the results of 1-1 teaching from previous years work that I have undertaken within the first year of Every Child Counts”*

*“I wonder if paired work will develop language skills and forging a mathematical dialogue. As I don't yet know the answer I do not have an initial preference”*

## **Teacher Survey Part B**

Thirteen of the 15 NC teachers returned the Teacher Survey Part B.

Eleven teachers reported that all children were taught in their allocated term. Two teachers reported that not all children were taught in their allocated term, one explaining that two children achieved level 2C in class and were therefore replaced by a child who needed the intervention. The other teacher explained that one child needed external support from authority on an afternoon and one child was working above bottom 5% by January. At the end of the trial the teachers were asked again what their preference was for how numbers Count should be delivered, At the end of the trial 5 teachers stated that they would prefer to deliver NC to individual children. Two teachers stated that they would prefer to deliver NC to pairs of children, and 5 teachers stated that they had no preference. One teacher did not state preference but explained *“I would like to have the choice to teach some children in pairs and some as individuals. However I would not like to do all pairs because not all would benefit from pairs teaching”*.

The teachers reasons for preferring individual delivery of Numbers Count included:

*“Some of the pairs had very different needs although there were times when it was good to a ‘pair”*”

*“But I would like to have the flexibility to sometimes teach pairs when I feel it is appropriate”*

*“Work can be delivered at children's ability. No need to recap if one child is absent. Don't mind pairs or groups occasionally - when all children are at same level”*

*“One to one teaching enables the teacher to know the strengths and weaknesses of the child in details which enables accurate target setting and planning”*

*“Although children enjoy working with a peer, I think you can address an individual's misconceptions immediately when teaching 1-1 and adapt the lesson”*

The teachers reasons for preferring to deliver Numbers Count to pairs of children included:

*“I can see [benefits to both ]I feel paired helps to develop a child's social development, which can have a positive impact in whole class teaching. However it is important to carefully choose the pairs”*

*“Language development; natural dialogue emerges rather than a sometimes contrived conversation when 1:1”*

The reasons for having no preference included:

*“Some pupils did not progress well in a pair whereas others did so I think flexibility is needed to suit individual needs”*

*“Some children coped well in pairs, others needed individual work because of problems”*

*“Both methods have pros and cons, but having the freedom to use my professional judgement over whether to teach children as pairs or individuals would greatly enhance the programme”*

*“Pairs are 'OK' if they are compatible pairs but quite difficult in they are not”*

*“I would like the flexibility to choose which delivery best suited the child and at different points in the program, even mixing within a session”*

Teachers were asked what the benefits for their school were of taking part in the trial. Nine teachers reported that it was a benefit that more children were able to receive the intervention. Other benefits noted include:

*“Opportunity to focus on paired work”*

*“Class teachers had additional information throughout the year, enabling them to plan for specific learning needs”*

*“Use of new Sandwells; further CPD through involvement of TA; liked the idea that [school] made a contribution”*

*“We found out 1 to 1 teaching is second to none”*

*“NC teacher received additional training”*

*“It was interesting for me to apply my skills to pairs.”*

Teachers reported the following challenges for their school in taking part in the trial:

*“Having to analyse the termly data based on only one child in Terms 1 and 2. Overall, more progress was made than reported because some pairs did very well. It was difficult to make people understand”*

*“Working with the pairs allocation - we may not have paired some children together due to personalities.*

*“Children working at different levels and with different needs (gaps). Children identified at beginning of year, not maybe best candidates by Spring and Summer term”*

*“As we didn't choose the pairings some were not as successful as hoped”*

*“Having to have the selected children in the set terms”.*

*“Additional and more complex paperwork i.e. Shared Diagnostic Assessments; shared IL plans; shared Exit Plans. No control over which children were allocated to pairs, plus no control over which term intervention took place was challenging in some cases too!”*

*“Some children missed out as all 14 had to be selected in July 2009. Some received intervention even though they naturally progressed and others who did not make as much progress as expected missed out”*

Three teachers also noted the additional paperwork and testing was time consuming. Other comments made by the teachers included:

*“Some of the selected children caught up with the class while those who not initially selected missed out because we couldn't de-select others”*

*“Just to say that I was pleasantly surprised by how successful and rewarding the trial was. Teaching pairs was stimulating, challenging ... and fun!”*

*“School would like access to the reports from York and Durham”*

*“Communication was good. It would be helpful to select pairs. I also found it restricting choosing all children at start of academic year”*

*“I enjoyed it. My Headteacher loves the progress pupils have made though NC”*

*“I hope to get the opportunity to meet up with other schools involved to discuss and share our experiences”*

*“I have really enjoyed the opportunity to take part in the trial. The training we had was excellent and I also enjoyed meeting other NC Teachers from other parts of the country”*

Eleven teachers said they would be happy to take part in another trial. Eight head teachers were happy for the Schools contact details to be added to a register of schools potentially interested in taking part in further trials.

## Appendix 45: Trial 2: Triplets: Summary of findings from pupil logs

Table 1: Summary of information collected on the pupil logs

| Summary   | Autumn  |      |          |      | Spring  |      |          |      | Summer  |      |
|---|---------|------|----------|------|---------|------|----------|------|---------|------|
|   | Singles |      | Triplets |      | Singles |      | Triplets |      | Singles |      |
|   | N       | %    | N        | %    | N       | %    | N        | %    | N       | %    |
| <b>Intervention received</b>                        |         |      |          |      |         |      |          |      |         |      |
| Autumn  | 9       | 100  | 44       | 100  | 0       | 0    | 0        | 0    | 0       | 0    |
| Spring  | 0       | 0    | 0        | 0    | 7       | 100  | 45       | 100  | 0       | 0    |
| Summer  | 0       | 0    | 0        | 0    | 0       | 0    | 0        | 0    | 14      | 100  |
| Total   | 9       | 100  | 44       | 100  | 7       | 100  | 45       | 100  | 14      | 100  |
| <b>Level of engagement by child</b>                 |         |      |          |      |         |      |          |      |         |      |
| Not engaged   | 0       | 0    | 0        | 0    | 0       | 0    | 0        | 0    | 0       | 0    |
| Rarely engaged                                      | 0       | 0    | 0        | 0    | 0       | 0    | 0        | 0    | 0       | 0    |
| Sometimes engaged                                   | 1       | 11.1 | 4        | 9.1  | 2       | 28.6 | 9        | 20   | 1       | 7.1  |
| Mostly engaged                                      | 7       | 77.8 | 24       | 54.5 | 4       | 57.1 | 26       | 57.8 | 8       | 57.1 |
| Always engaged                                      | 1       | 11.1 | 16       | 36.4 | 1       | 14.3 | 10       | 22.2 | 5       | 35.7 |
| Total   | 9       | 100  | 44       | 100  | 7       | 100  | 45       | 100  | 14      | 100  |
| <b>Level of engagement by parent/carers</b>         |         |      |          |      |         |      |          |      |         |      |
| Not engaged   | 0       | 0    | 5        | 11.4 | 0       | 0    | 4        | 9.1  | 2       | 14.3 |
| Rarely engaged                                      | 2       | 22.2 | 8        | 18.2 | 2       | 28.6 | 10       | 22.7 | 5       | 35.7 |
| Sometimes engaged                                   | 3       | 33.3 | 11       | 25   | 3       | 42.9 | 17       | 38.6 | 1       | 7.1  |
| Mostly engaged                                      | 2       | 22.2 | 11       | 25   | 2       | 28.6 | 9        | 20.5 | 4       | 28.6 |
| Always engaged                                      | 2       | 22.2 | 9        | 20.5 | 0       | 0    | 4        | 9.1  | 2       | 14.3 |
| Total   | 9       | 100  | 44       | 100  | 7       | 100  | 44       | 100  | 14      | 100  |
| <b>Were all NC lessons 30 mins?</b>                 |         |      |          |      |         |      |          |      |         |      |
| Yes   | 9       | 100  | 44       | 100  | 7       | 100  | 44       | 97.8 | 14      | 100  |
| No  | 0       | 0    | 0        | 0    | 0       | 0    | 1        | 2.2  | 0       | 0    |
| Total   | 9       | 100  | 44       | 100  | 7       | 100  | 45       | 100  | 14      | 100  |
| <b>Did the child exit NC at 12 weeks?</b>           |         |      |          |      |         |      |          |      |         |      |
| Yes   | 9       | 100  | 40       | 90.9 | 5       | 71.4 | 31       | 68.9 | 11      | 78.6 |
| No  | 0       | 0    | 4        | 9.1  | 2       | 28.6 | 14       | 31.1 | 3       | 21.4 |
| Total   | 9       | 100  | 44       | 100  | 7       | 100  | 45       | 100  | 14      | 100  |
| <b>What happened to the child at the end of NC?</b> |         |      |          |      |         |      |          |      |         |      |
| Returned to normal class teaching                   | 9       | 100  | 42       | 100  | 7       | 100  | 38       | 84.4 | 12      | 100  |
| Referred for SEN assessment                         | 0       | 0    | 0        | 0    | 0       | 0    | 4        | 8.9  | 0       | 0    |
| Other   | 0       | 0    | 0        | 0    | 0       | 0    | 3        | 6.7  | 0       | 0    |
| Total   | 9       | 100  | 42       | 100  | 7       | 100  | 45       | 100  | 12      | 100  |

**Table 2: Summary of type of delivery and term the intervention was actually received**

| Randomised method and term of delivery |        | Method of delivery received |          | Total |
|--|--------|-----------------------------|----------|-------|
|  |        | Singles                     | Triplets |       |
| Singles                                | Autumn | 9 (100)                     | 0 (0)    | 9     |
|  | Spring | 7 (100)                     | 0 (0)    | 7     |
|  | Summer | 14 (100)                    | 0 (0)    | 14    |
|  | Total  | 30                          | 0        | 30    |
| Triplets                               | Autumn | 0 (0)                       | 43 (100) | 43    |
|  | Spring | 0 (0)                       | 43 (100) | 43    |
|  | Total  | 0                           | 86       | 86    |

**Table 3: Total number of NC lessons received**

| Actual delivery   | Randomised term and method of delivery |               |             |             |               |
|-------------------|--|---------------|-------------|-------------|---------------|
|                   | Autumn                                 |               | Spring      |             | Summer        |
|                   | Singles                                | Triplets      | Singles     | Triplets    | Singles       |
| <b>1 to 1</b>     |  |               |             |             |               |
| N                 | 9                                      | 6             | 7           | 13          | 14            |
| Mean (sd)         | 41.2 (7.9)                             | 2.7 (2.0)     | 41.1 (7.3)  | 5.6 (4.0)   | 36.8 (6.4)    |
| Median (min, max) | 43 (29, 53)                            | 2 (1, 5)      | 40 (32, 56) | 7 (1, 12)   | 32.5 (30, 50) |
| <b>1 to 2</b>     |  |               |             |             |               |
| N                 | 3                                      | 23            | 1           | 23          | 9             |
| Mean (sd)         | 1.3 (0.6)                              | 4.9 (4.1)     | -           | 6.3 (5.5)   | 2.7 (2.2)     |
| Median (min, max) | 1 (1, 2)                               | 4 (1, 20)     | 2           | 5 (1, 23)   | 2 (1, 7)      |
| <b>1 to 3</b>     |  |               |             |             |               |
| N                 | 0                                      | 44            | 2           | 45          | 2             |
| Mean (sd)         | 0                                      | 39.7 (7.7)    | -           | 34.6 (8.1)  | -             |
| Median (min, max) | 0                                      | 40.5 (24, 53) | 2.5 (1, 4)  | 34 (11, 50) | 1 (1, 1)      |

**Results:**

- No children were rarely or not engaged with NC. However there was a more diverse spread of parental engagement with NC.
- The majority of lessons were 30 minutes in length.
- The majority of children exited the NC intervention at the end of the term they received the intervention. A lower percentage of children taught as singles (71.4) and triplets (68.9) in the Spring term exited the intervention at the end of the term.
- The majority of children returned to normal class teaching at the end of each term.
- No children were taught in a different term to the term they were originally randomly allocated to.
- All the children were taught using the method of delivery they were randomly allocated to.

## Appendix 46: Trial 2: Triplets: Summary of the teacher surveys

### Teacher Survey Part A

Eight schools took part in Trial 2: Triplets. Eight NC teachers returned the Teacher Survey Part A.

Seven of the eight NC teachers were female. Five of the NC teachers had other roles in the school as well as being the Numbers Count teacher including; inclusion manager; Reading Recovery teacher; Curriculum Leader for Physical Development, Health, Well-being and out of hours; Foundation Stage Co-ordinator and Deputy Head; and Key Stage 1 Maths Leader. The mean number of years teaching experience of the NC teachers was 18 (SD 10.18, min 7, max 34)

When asked their highest qualification 3 teachers reported it to be a PGCE (one of who noted they were currently studying for an MA), one reported it to be a masters degree and 4 reported it to be a bachelors degree (one of whom noted they were currently studying for an MA). One teacher reported they had further qualifications relating to teaching children with special educational needs, one teacher reported they had further qualifications relating to teaching mathematics and 3 teachers reported they had other relevant qualifications. When asked if they had a preference for how Numbers Count should be delivered, 3 teachers expressed a preference for individual delivery of Numbers Count, 2 teachers expressed a preference for delivery Numbers Count to triplets of children and 3 teachers had no preference.

The teachers reasons for preferring individual delivery of Numbers Count included:

*“1:1 has worked so well in school, am reluctant to trial groups but interested in comparing the two”*

*“You can adapt each lesson to the specific needs of that child”*

*“I have enjoyed being able to tailor my teaching to an individual child and feel the children have benefitted from having one to one time with an experienced teacher who knows just what that child needs to achieve to succeed in their learning”*

The teachers reasons for preferring to deliver Numbers Count to triplets of children included:

*“The very quiet and shy children took a few weeks to build a relationship and therefore did not always try their best last year. When group work was tried, they encouraged each other and bounced ideas off each other”*

*“They support each other and bounce ideas off each other. Better value for money for school”*

The reasons for having no preference included:

*“Last year there were some children who would have benefited from working as part of a small group - there were others who would not!”*

*“Just love teaching children - any amount!”*

## Teacher Survey Part B

Five of the eight NC teachers returned the Teacher Survey Part B.

Four teachers reported that all children were taught in their allocated term. One teacher reported that *“By the summer term 2 pupils had already attained Level 2B and so didn't require NC. They were replaced by 2 children who did.”*

At the end of the trial the teachers were asked again what their preference was for how Numbers Count should be delivered, At the end of the trial one teacher stated that they would prefer to deliver NC to individual children stating *“Some children do work well in small groups however I felt there was always one child who was harder to target as abilities/gaps different”*. Four teachers stated that they would prefer to deliver NC to triplets of children, their reasons included:

*“Depends if we could group the children. In groups lots of improvement in language and children settled quicker. But depends if the children have specific problems!”*

*“I would prefer to do a mixture of both at my own discretion (but realise this was not possible this year)”*

*“If we were able to choose the triplet group and if there were enough children of similar level and attitude, then the triplet groups worked well. More challenging for the children (& me) and better dynamics”*

*“I feel it is important for the NC teacher to be flexible in the grouping of children. The SENTs and Diagnostic assessments need to be done individually as trying to do DA in a triplet is of limited use. Once the teacher has a good understanding of the children they can then be put into pairs or triplets or taught individually depending on the child”*

Teachers reported the following benefits for their school of taking part in the trial:

*“some groups did work well”*

*“Improvement in Maths in less able children”*

*“It allowed us to see that NC can be delivered as a group intervention”*

Three NC teachers reported that being able to deliver the intervention to more children was a benefit.

Teachers reported the following challenges for their school in taking part in the trial:

*“Paperwork was greater than expected, more time consuming than expected. Parents not always supportive of random allocation to begin with. Time allocated for assessments/moderator delaying start”*

*“The random groupings did not necessarily suit the groups - personality or ability”*

*“Disruption of groups coming in and out and time taken for additional testing. Also number of children involved as this is a one form entry school”*

*“Deciding a long way in advance which children would need NC. This was because some children made great progress over the autumn and spring terms so by the summer they didn't require Numbers Count”*

Other comments made by the teachers included:

*“As already stated work load greater than expected doing trial; and would appreciate feedback on results too”*

*"The random allocation made some of the groups difficult"*

*"We would have liked to see the NFER results"*

*"It was a difficult decision to replace the 2 girls who were already L2B as I didn't want to disrupt the trial - but I needed to give the opportunity of Numbers Count to children who needed it"*

Five teachers said they would be happy to take part in another trial and that their head teacher was happy for the Schools contact details to be added to a register of schools potentially interested in taking part in further trials.

The following advice was offered for conducting future trials:

*"Less duplicated paperwork e.g. NC paperwork expectations from Edge Hill and from York overlapped and meant twice as much work"*

*"We think we would like to have seen the research proposal for the trial so we knew more what to expect"*

*"Felt fairly well informed by York. Training day in London not very useful"*



# **Independent Evaluation of Every Child Counts: Final Report**

## **Secondary Analyses Appendices**

Torgerson, C.J., Wiggins, A., Torgerson, D.J., Ainsworth, H., Barmby, P., Hewitt, C., Jones, K., Hendry, V., Askew, M., Bland, M., Coe, R., Higgins, S., Hodgen, J., Hulme, C., Tymms, P. (2011c) Every Child Counts: The independent evaluation, Appendices, report to DfE, January 2011

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## **Appendix 1: Protocol Secondary Analyses (final version)**

### **Protocol Version 2.1 (30/10/2009)**

(Ethics approval received 11/02/'10)  
(Operational steering group approval received 16/12/'09)

## **National Evaluation of Every Child Counts**

### **Secondary Analyses**

The University of York and Durham University, in conjunction with Kings College London, Warwick University and the Institute of Education, University of London are undertaking a national evaluation of Every Child Counts (ECC).

There are two over-arching aims to this research:

- To provide robust impact data to assess the effectiveness of the Every Child Counts programme on improving children's attainment in mathematics (impact evaluations);
- To provide formative feedback on the delivery of the development phase during the course of the evaluation, to inform future development of the intervention, associated training, and leadership and management of the programme (process evaluation).

The first (impact) aim will be met by way of two randomised controlled trials (RCTs) and a series of secondary data analyses using the National Pupil Database (NPD). The second (process) aim will be met by an on-going programme of qualitative research.

This protocol describes the secondary NPD analyses of the Every Child Counts (ECC) intervention 'Numbers Count'. Separate protocols have been written for each of the trials and for the process evaluation. This protocol will be submitted to the ECC evaluation Steering Committee, the University of York, Humanities and Social Sciences Ethics Committee and the Research Advisory Group for approval.

The secondary analyses in Yr 1 will involve a comparison phase using national data and two quasi-experimental designs: interrupted time series (ITS) design and case control design (CC).

In an interrupted time series (ITS) design a group of participants is tested repeatedly both before and after the introduction of an intervention, in this case before and after the introduction of Every Child Counts in two cohorts of schools. In essence this is a single-group, pre- post-test design with multiple before and after measurements which enable confounding variables (e.g. regression to the mean effects, temporal changes etc.) to be detected. If the plot of the dependent variable (in this case KS1 outcomes) shows a change in level or direction at the point of intervention (either immediately after or delayed), and potentially confounding variables have been minimised due to multiple observations (in this case use of multiple schools), then it is possible to ascribe a causal relationship between the intervention and the dependent variable (in this case KS1 outcomes). However, it should be noted that the ITS design does not permit such a strong causal relationship to be established as the more rigorous randomized controlled trial design. For example, a contemporaneous

policy intervention that occurs at the same time as ECC may confound the results of the evaluation using this method (in education, this is a real threat due to multiple policy changes). This would not be the case using a randomized controlled trial design. Therefore, the results from the ITS analyses in the Secondary Analyses will be used to support the results from ECC Trial 1.

In a case control (CC) design, participants are identified with a specific intervention or outcome and compared with a control group of participants without the intervention or outcome. In this case the KS1 outcomes for schools already implementing Every Child Counts are compared with the KS1 outcomes for matched control schools. As with the ITS design, the case control design provides a mechanism for establishing a causal link between ECC and KS1 outcomes, but, due to the limitations associated with matching, the causal link is not as strong as that provided by the more rigorous randomized controlled trial design. Because controls have not been randomly allocated there is a real danger that selection bias will affect the results (because of the possibility that control schools will have subtle but important differences that may affect outcomes). Therefore, the results from the Case Control analyses in the Secondary Analyses will be used to support the results from ECC Trial 1.

The Secondary Analyses will use data from all of the intervention children in the Every Child Counts 2008-9, 2009-10 cohort schools (with the exception of the schools taking part in Trial 2), data from all of the children in these schools not exposed to the Every Child Counts intervention, historical data from the same schools and data from matched comparison schools derived from the National Pupil Database and PLASC. We will assess the impact of one-to-one delivery of the Every Child Counts intervention compared with non treated controls using 2009 KS1 outcomes. The analyses will be reported at the same time as the findings from Trials 1 and 2 are reported.

The Department for Children, Schools and Families (DCSF) is the sole external funder of this trial. This protocol is derived from the detailed project description of the DCSF funding application entitled "Evaluation of Every Child Counts" [DCSF: EOR/SBU2008].

## **SUMMARY OF PLANNED INVESTIGATION**

Secondary analyses will use national data to undertake a series of 4 quasi-experiments, in order to compare both similar groups of pupils and similar schools.

### **(1) Interrupted Time Series design (ITS): Baseline for longitudinal analysis in each ECC school in 2008-9 cohort**

We will use historical data to enable us to set up an Interrupted Time Series (ITS) approach with each school acting as its own control. We will plot whole school KS1 results in maths and English for the three data points preceding the implementation of ECC in the 2008-9 cohort schools (2006, 2007 and 2008). This will then provide a baseline for data points *after* implementation of ECC in 2008-9 in 2009 and 2010. In this way we will set up a quasi-experiment in which it will be possible to see whether Every Child Counts has had an impact on whole school attainment in the Yr 1 ECC cohort. Note: this analysis will take into account the fact that not all Numbers Count teachers will have received accreditation during the period 2008-9. With two post-intervention time points we can make some estimate of a whole-school treatment effect in KS1 outcomes.

### **(2) Case control design: Pre- post-test data for ECC 2008-9 cohort compared with pre-post-test data for matched control group (ECC 2009-10 cohort)**

Comparing the results for the 2008-9 cohort from the three data points preceding 2009 with the results from 2009 is not a robust analysis in itself, because of the possible bias due to confounding factors within each school. However, we will adopt a more rigorous case

control design in which we will compare KS1 outcomes for schools in the 2008-9 cohort with control schools matched using the nationally available Pupil Level Annual School Census (PLASC) and National Pupil Database (NPD) data. The matched control schools will be schools that started to implement the intervention in the period 2009-10. We intend to match the schools based on Foundation Stage Profile (FSP) data and other available variables such as proportion of children eligible for free school meals. We will use the KS1 scores in 2009 and 2010 to assess the differences in outcome between the two groups of schools – intervention and control. Robust comparison of Every Child Counts children's KS1 outcomes with the outcomes of the matched comparison group, including subgroup variation will be possible. Subgroup analyses will include lowest band of attainers at FSP and FSM status. Both descriptive and inferential statistics will be presented. By using the variety of approaches outlined above we will be able to triangulate the results. If all the results are concordant this will reassure us that any effect is a true effect rather than due to bias.

### **(3) Case control design: Pre- post-test data for ECC 2009-10 cohort compared with pre- post-test data for matched control group**

Comparing the results for the 2009-10 cohort from the three data points preceding 2010 with the results from 2010 would not be a robust analysis in itself, because of the possible bias due to confounding factors within each school, and because there would be only one post-intervention data point. However, we will adopt a more rigorous case control design in which we will compare KS1 outcomes for schools in the 2009-10 cohort with control schools matched using the nationally available Pupil Level Annual School Census (PLASC) and National Pupil Database (NPD) data. The matched control schools will be matched on Foundation Stage Profile (FSP) data and other available variables such as proportion of children eligible for free school meals. We will use the KS1 scores in 2010 to assess the differences in outcome between the two groups of schools – intervention and control. Robust comparison of Every Child Counts children's KS1 outcomes with the outcomes of the matched comparison group, including subgroup variation will be possible. Subgroup analyses will include lowest band of attainers at FSP and FSM status. Both descriptive and inferential statistics will be presented. By using the variety of approaches outlined above we will be able to triangulate the results. If all the results are concordant this will reassure us that any effect is a true effect rather than due to bias.

### **Business case**

We will request that the DCSF facilitate our access to the national data. The data we request will be used to assess the wider impact of Every Child Counts in schools.

There are two cohorts of schools implementing ECC 2008-9 and 2009-10. Comparison and matching is at the school level. We will need national pupil-level NPD/PLASC data for KS1 in 2006, 07, 08, 09, 10 all linked to prior FSP etc.

There will be two kinds of analysis: ITS compares each ECC school with its own previous performance; CC compares each ECC school with a matched control (and for the first cohort, the second provides a control).

Carole Torgerson and David Torgerson  
150110

# **Independent Evaluation of Every Child Counts: Final Report**

## **Process Evaluation Appendices**

Torgerson, C.J., Wiggins, A., Torgerson, D.J., Ainsworth, H., Barmby, P., Hewitt, C., Jones, K., Hendry, V., Askew, M., Bland, M., Coe, R., Higgins, S., Hodgen, J., Hulme, C., Tymms, P. (2011c) Every Child Counts: The independent evaluation, Appendices, report to DfE, January 2011

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## **Appendix 1: Process Evaluation Protocol**

### **Protocol Version 8.0 (6.5.09)**

(Ethics approval received 22/05/'09)

#### **National Evaluation of Every Child Counts: Process Evaluation**

This protocol describes a process evaluation of the Every Child Counts (ECC) intervention 'Numbers Count'.

The Department for Children, Schools and Families (DCSF) is the sole external funder of this trial. This protocol is derived from the detailed project description of the DCSF funding application entitled "Evaluation of Every Child Counts" [DCSF: EOR/SBU2008].

The evaluation will be led by researchers from the Centre for Evaluation and Monitoring (CEM) at Durham University. It will be undertaken in cooperation with colleagues from the Institute for Effective Education (IEE) and the York Trials Unit (YTU), University of York.

#### **SUMMARY OF PLANNED INVESTIGATION**

##### **Research objectives**

The primary aim of the whole is to obtain robust evidence of the effectiveness of the of the Every Child Counts initiative, of which the Numbers Count intervention is a part, on children's attainment in mathematics. The process evaluation will complement two randomised controlled trials (RCT) of one-to-one and group delivery of the intervention versus normal practice.

Key Process Evaluation Objectives:

1. Identify key features of the effective implementation of the programme, with a focus on the professional development and support provided to Teacher Leaders, teachers and teaching assistants, and the leadership and management of the work at all levels.
2. Identify challenges to effective implementation of the programme in schools and LAs, and how the national Every Child Counts partnership, local authorities and schools can overcome them.
3. Identify the key features of the effective implementation of a small group intervention model.
4. Identify the key elements that make intensive support teaching itself effective, both over the course of the intervention and in relation to whether children maintain the gains they have made once the intervention is over.
5. Identify the key factors which enable the teachers trained to deliver Every Child Counts to have a wider impact of learning, teaching and mathematics standards in their schools.

##### **Study population**

The study could include a very wide range of people, although most of our contact will be with a far smaller group.

*Potential contributors:*



- Schools opting to participate in the ECC programme
- Parents children and staff from the above
- Schools choosing not to opt in (Heads only)
- All LAs in England
- The ECC professional development provider – Edge Hill University
- ECC National Trainers (Regionally based)
- ECC Teacher Leaders (LA based)
- NC Teachers (School based)

*Main planned contributors:*

The bulk of the research will be with 18 Schools from 6 different LAs in England. The LAs have been identified by the ECC steering group in a way which avoids those schools which are taking part in the RCTs. Three schools from each of the LAs have been chosen at random as our first choice. If any choose not to opt in others from that LA will be invited to participate.

## **BACKGROUND**

The relative improvement of primary mathematics teaching is widely accepted and to be applauded, with the number of 11 year-olds gaining level 4 and above at Key Stage 2 having risen from 59% percent in 1998 to the current figure of over 77%. However, the picture for low achieving pupils is rather bleak and of widespread concern. Since 1998 the number of children failing to achieve level 3 has remained at about 6% - i.e. whilst the majority of children have improved, the lowest performing children have remained at much the same level.

There are many harmful consequences of low attainment in maths, both in the short term, for example, not being able to access many areas of the curriculum (as well as maths itself) and the potential negative social consequences; and in the longer term, difficulties at secondary school and into adulthood, as well as limitations in terms of the skills of the UK workforce. Indeed, a slightly higher proportion than the 5% of low attaining pupils at KS1 go on to leave secondary education with no qualification in mathematics.

It is widely agreed that a child who is having significant difficulties at an early stage (i.e. KS1) is likely to under-achieve in mathematics throughout their school life, and beyond. To help address these problems the Primary National Strategy (PNS) introduced the three wave model of intervention, with the lowest performing (wave 3) children receiving personalised and individual remedial teaching.

More recently the Every Child Counts (ECC) initiative has been developed by a partnership consisting of a coalition of business partners and charitable trusts (the Every Child a Chance charity) and the Government (DCSF and the National Strategies). Every Child Counts has as its main aim developing and supporting Wave 3 intervention for the bottom 5% of KS1 children, with a subsidiary aim of impacting on standards more widely by influencing classroom practice and supporting less intensive (Teaching Assistant led) interventions for the bottom 5-10% group.

The Every Child Counts intervention Numbers Count provides an intensive one to one intervention for those children identified as low achievers (the bottom 5%). In practice it aims to raise their level of performance so that they achieve level 2 or better and wherever possible to level 2B or better by the end of KS1 – in effect putting them on a par with their peers, and then able to continue to progress in maths in the normal mainstream class

setting. It is proposed to achieve this by developing mathematics interventions for Year 2 children within the following three waves:

Wave 1 - Quality first teaching for all children

Wave 2 – Small group additional intervention for children just below national expectations

Wave 3 – Individual or very small group intervention with a trained and supported TA for children who are struggling and Numbers Count additional intervention on an individual and/or very small group basis with a trained specialist teacher.

*Every Child Counts* contributes funding to help schools to employ and train specialist Numbers Count (NC) teachers to deliver daily one-to-one Numbers Count teaching for those children with the most severe difficulties.

Edge Hill University, working in partnership with Lancashire Local Authority, has taken the lead in developing the intensive intervention Numbers Count which is the specific focus of this evaluation.

Numbers Count is a 12 week programme, consisting of daily 30 minute sessions for the target children and delivered by the trained Numbers Count teachers. The core elements are a comprehensive diagnostic assessment of the child's strengths and weaknesses, core learning objectives for the lessons and guidance for teachers on lesson structure and key teaching approaches. There is also continuing professional development and quality assurance for NC teachers. Numbers Count is designed to help children to develop their knowledge and understanding of number. Numbers Count teachers aim to give children confidence in number and an understanding of patterns and relationships that they can extend to other aspects of mathematics in their class lessons. They use shape, space and measures and handling data as contexts for the development and application of children's number skills and children continue to study the full breadth of the mathematics curriculum with their class teacher.

There is a clear need to obtain reliable evidence to inform policy and practice, to establish the level of effectiveness of Numbers Count compared with normal classroom practice (Trials 1 and 2), and to identify and describe key features of and challenges to effective implementation of the programme. This is the focus of this evaluation. There is also a need to have robust data by Easter 2010 in order to enable a formative input into policy decision regarding the national roll-out in September 2010.

## **RESEARCH METHODS**

The research comprises of two interrelated strands– the *learning* process and the *organisational* process.

Learning:

- (1) Numbers Count Teacher - professional development, preparation and on-going support.
- (2) Classroom work - intervention, re-integration, wider issues

Organisational:

- (3) School level – organisational and infrastructure, wider issues (Heads and Parents)
- (4) LAs – organisational and infrastructure, wider relevance / impact
- (5) Professional development – organisational and infrastructure
- (6) ECC management – programme organisation, wider issues and impacts

The Numbers Count teaching and learning elements (1-2) although at a development stage have been well defined and clearly documented and therefore we are able to predict many of the key issues. This is reflected in our detailed plans, although there will still be an opportunity through semi-structured questions to explore other issues not foreseen at this stage. For the organisational the key issues are more difficult to anticipate as ECC is a complex programme which interacts with many aspects of the school curriculum and operations as well as local and national policies and priorities. Consequently there will be a large element of open ended questions and seeking the thoughts and views of interviewees themselves as to what is important and what the relevant key factors in the overarching evaluation aims.

## **The learning process (1 and 2) evaluation of Every Child Counts**

This document details the protocols to be used for the various parts of the learning process evaluation. The learning process evaluation consists of four main parts:

- Attendance at the face-to-face professional development sessions of Numbers Count Teachers
- Online survey of Numbers Count Teachers
- Visits to schools to observe Numbers Count lessons
- Visits to schools to observe Year 2 mathematics lessons when pupils graduate from the Numbers Count programme

Within these main activities, specific evaluation activities will be carried out as detailed in Table 1 below. The detailed protocols for each evaluation activity will then be detailed in the rest of this document. The expectation is that these protocols, excepting those involved in the attendance at professional development sessions, will be piloted and modified accordingly. All instruments to be used in the different parts of the evaluation will be developed and cleared by the steering group.

**Table 1: Specific activities to be carried out in the different parts of the evaluation**

|   | Observation of professional development | Interviews with participating Numbers Count Teachers | Interviews with Numbers Count Teacher Leaders | Online survey | Interview with Numbers Count Teacher prior to the lesson observation | Numbers Count lesson observations | Interview with pupils following the Numbers Count lesson observations | Interview with Numbers Count Teacher | Interview with Y2 teacher and Numbers Count Teacher prior to the lesson observation | Y2 lesson observations | Interview with pupils following the Y2 lesson observations | Interview with Y2 teacher | Interview with Y2 teaching assistants |
|---|---|--|---|---------------|--|-----------------------------------|---|--------------------------------------|---|------------------------|--|---------------------------|---------------------------------------|
| Attendance at the professional development sessions (18 sessions)   | ✓                                       | ✓  | ✓   |               |  |                                   |   |                                      |   |                        |  |                           |                                       |
| Online survey   |   |  |   | ✓             |  |                                   |   |                                      |   |                        |  |                           |                                       |
| Visits to schools to observe Numbers Count lessons (18 schools)     |   |  |   |               | ✓  | ✓                                 | ✓   | ✓                                    |   |                        |  |                           |                                       |
| Visits to schools to observe Year 2 mathematics lessons (9 schools) |   |  |   |               |  |                                   |   |                                      | ✓   | ✓                      | ✓  | ✓                         | ✓                                     |

### **3 – 6            Organisational**

This covers the broad organisational aspects of Every Child Counts at the following levels

- (3) School Management and Organisation
- (4) Local Authority Organisation and Infrastructure
- (5) Professional Development Partnership
- (6) Programme Management

There will be a logical progression to our approach in that individual sections would be informed by, and build on previous sections. The school would be the starting point, and this is of course the critical level, in that schools, in particular the head, are absolutely essential to the adoption and effectiveness of the programme. Moreover the heads besides being in positions of great influence, are well placed to balance and assess the implications and impact of this complex intervention.

Our general approach, in part given the nature of the respondents (eg. Heads, LA officers) as well as the inherent complexities, will be to use a semi – structured approach. This will provide both the necessary largely predictable structure to meet the needs of the research, but will also allow respondents to bring up and develop their own thoughts, as well as providing the researchers the opportunity to explore relevant lines of research that arise.

**School Management and Organisation:** *There will be three parts to this level*

**Head Teacher interviews:** These will provide the bulk of the evidence for this (process) aspect of research. Heads are in a unique position to both understand the needs of their school and individual children, as well as their broader responsibilities to both raise standards generally, and improve the quality of education. These will be carried out throughout the year.

**Parental Interviews:** NC is an unusual intervention in schools, and parents are likely to be able to play an important part in feeding back the effect on their children. Moreover it is an explicit aim of the programme to involve as far as possible parents. It is anticipated that these interviews would be carried out as far as possible with parents of pupils whose lessons we were observing. This approach will help triangulate the findings. In practice schools (heads and other staff who knew the children) would make the initial contact and a face to face interview or telephone interview would be carried out. We will provide schools with copies of information letters. Where appropriate, and where possible (again on a case by case basis) we would seek to speak with groups of parents.

**Parental Survey:** This would be developed from the parental interviews and school level observation and would seek to provide clarification and quantification to emerging findings or themes. The survey would be mounted on the Bristol Online Survey (BOS) facility. The survey questions, which will be a mix of Likert-scale questions and more open-ended / free text questions. We appreciate that there will be some degree of response bias, however, the key aim will be to raise issues rather than to provide reliable parental assessment of the programme.

## Fieldwork Timetable

| Fieldwork  | Summer term 09  | Autumn term 09  | Spring term 10   | Summer term 10   |
|--|---|---|--|--|
| <b>Learning process</b>  |   |   |  |  |
| Observation of Numbers Count training/interviews with Numbers Count teachers/interviews with Teacher Leaders. The intention is to attend a range of Cohort 1 and Cohort 2 training sessions, amounting to 16 regional and 2 national training sessions.  | 4 sessions  | 8 sessions  | 6 sessions   |  |
| Online survey  |   | First implementation  |  | Second implementation  |
| First school visits (interview with Numbers Count teacher; session observation; pupil interviews)  | 4 schools in 4 LAs  | 8 schools in 6 LAs  | 6 schools in 6 LAs   |  |
| Second school visits (reintegration observation; Y2 teacher and teaching assistant interviews; pupil interviews)   |   | 3 schools in 3 LAs  | 3 schools in 3 LAs   | 3 schools in 3 LAs   |
| <b>Organisational aspects</b>  |   |   |  |  |
| School level (headteacher interviews; parent interviews; parent survey)  | 4 heads, and aim for 9 parents (per school), group, individual or phone | 6 heads, and aim for 9 parents (per school), group, individual or phone | 6 heads and aim for 9 parents (per school), group, individual or phone |  |
| Local authority level (interviews with LA officers; interviews with headteachers of non-opt-in schools) This will include a senior officer with an overall authority strategic responsibility, an officer with primary level school improvement responsibility, an officer with TL line management responsibility  | 2 groups of LA officers in 2 LAs, 2 non-opt-in heads (phone interviews) | 2 groups of LA officers in 2 LAs, 2 non-opt-in heads (phone interviews) | 2 groups of LA officers in 2 LAs, 1 non-opt-in heads (phone interview) | 2 groups of LA officers in 2 LAs, 1 non-opt-in heads (phone interview) |
| National training level (interviews with Edge Hill staff and National Trainers) this will include, the ECC Professional Development Co-ordinator (re the MA and overview of the PD programmes for TLs and teachers)<br>the ECC Research Officer (evaluation of the PD programme, and further QA)<br>the ECC Administrative Manager (communications, data collection) | 2 groups of national trainers, 1 group of Edge Hill staff               | 3 groups of national trainers, 1 group of Edge Hill staff               | 3 groups of national trainers, 1 group of Edge Hill staff              | 1 groups of national trainers, 1 group of Edge Hill staff              |
| Programme management level (interviews with ECaCT and National Strategies)   | 3 groups  | 4   | 4  | 2  |

**Notes:**

*Where possible / practical there will be overlap between the learning and organisational aspects – ie. using one school so as to give more of the ‘whole’ picture. This will be agreed on a case by case basis. In practice in a school for instance this would include an hour or more with the headteacher, speaking to parents and where possible other staff so as to build up a whole picture of the organisational impact and implications of ECC.*

*In terms of the (Organisational) School interviews we have assumed a day visit with optional follow-up. This may be a further visit (possibly to coincide with the classroom follow up visit for schools), or email / telephone contact - in all cases it will be subject to the co-operation and willing agreement of the participants*

*We anticipate that all of the schools will participate in all of the elements of the evaluation so as to provide a reasonably comprehensive view. If any schools do not opt-in or drop out during the evaluation period we will contact the replacements, although we are mindful of the danger of too ‘spread out’ a view of the programme.*

*For LAs, discussion will be had with a range of staff so as to build up a useful picture and to include different perspectives. We have assumed 2 day visits per LA and where possible this will be with the same staff so as to be able to assess the progress made. The interviews for non-opt-in schools will be telephone based and subject to identification of suitable schools by the LAs (ie. will take place after the initial LA visit).*

## School-eye view of fieldwork

|   | Staff time taken<br>(additional to normal NC<br>practice)   | Preparation required   | No. of<br>schools<br>involved |
|---|---|--|-------------------------------|
| <b>First visit</b>  |   |  |                               |
| 1. Pre-observation<br>interview with Numbers<br>Count teacher                       | 20 minutes  | A room to talk<br>Baseline measures of pupils'<br>attainment and attitudes<br>Classroom observations of<br>children<br>Numbers count diagnostic<br>assessment of children<br>Permission to audio record the<br>interview | 18                            |
| 2. Observation of two<br>Numbers Count<br>sessions                                  | None  | None   | 18                            |
| 3. Discussion of<br>observation   | 10 minutes  | None   | 18                            |
| 4. Interviews with pupils   | 15 minutes  | A room to talk<br>Presence of Year 2 teacher or<br>teaching assistant<br>Permission to audio record the<br>pupils  | 18                            |
| 5. General interview with<br>Numbers Count teacher<br>about ECC                     | 30 minutes  | Permission to audio record the<br>interview  | 18                            |
| <b>Second visit</b>   |   |  |                               |
| 1. Pre-observation<br>interview with Numbers<br>Count teacher and Year<br>2 teacher | 20 minutes  | A room to talk<br>Exit assessment of children<br>Numbers Count Exit record<br>Permission to audio record the<br>interview  | 9                             |
| 2. Observation of Year 2<br>lessons   | 10 minutes at the end of<br>the lesson in order to<br>reflect on the lesson                       | None   | 9                             |
| 3. Post-observation<br>interview with Year 2<br>teacher                             | 30 minutes  | Permission to audio record the<br>interview  | 9                             |
| 4. Interview with Year 2<br>teaching assistant                                      | 30 minutes  | Permission to audio record the<br>interview  | 9                             |
| 5. Pupil interviews   | 15 minutes  | A room to talk<br>Presence of Year 2 teacher or<br>teaching assistant<br>Permission to audio record the<br>pupils  | 9                             |
| <b>Others</b>   | As far as possible there<br>will take place on the same<br>day as First / second<br>school visits |  |                               |
| Interview with<br>headteacher   | One hour for initial<br>interview. Follow up as<br>appropriate, including<br>telephone and email. | None   | 18                            |
| Interviews with parents   | Mainly as part of NC<br>contact, in some cases a<br>few mines extra to make<br>the link / contact | None   | 18                            |



|  |      |      |    |
|--|------|------|----|
| Parent survey (details provided for each of the 3 terms and but access will remain open) | None | None | 18 |
|--|------|------|----|

## Research Instrument concise summaries

### (3) School Level: this will assess the following key areas

- The school's context and heads knowledge of ECC
- Views on their NT teacher including training and preparation
- Recruitment and support
- Organisational (school level) issues including management of the Numbers Count teacher, and overall management of the ECC programme (including Numbers Count lessons, liaison with Year 2 teachers, and promoting the wider benefits)
- Resourcing issues
- Wider staff involvement
- Perceived programme impacts (including beyond individual child's maths)
- Key challenges
- Future developments of model

### (4) Local Authority Level: this will assess the following key areas

- LAs general views on the ECC programme and NC intervention
- Position of ECC in school improvement children services planning
- Alignment with existing primary strategy plans and initiatives
- Knowledge and awareness of ECC by other LA personnel (including support advisers)
- Recruiting and supporting schools
- Head teacher communication systems (including new heads induction programme)
- Allocation and targeting of funding
- Monitoring and evaluation systems
- LA self evaluation system for ECC
- Management and support of the Teacher Leader
- Supporting NC teacher to provide support to their schools for a 'layered model of intervention'
- Ongoing professional development of NC teachers
- Management and support of TLs
- TLs views and impact of consortium working
- LAs views on consortium working

### (5) Professional Development Partnership: this will assess the following key areas

- Observe regional training sessions for Numbers Count Teachers and look for variation in practice;
- Gain Numbers Count Teachers' views on the professional development opportunities and areas where further support is required;
- Gain Teacher Leaders' views on the provision of professional development opportunities;
- Observe National Events for Teacher Leaders;

- Examine the support provided for and required by the Teacher Leaders;
- Observe Numbers Count Lessons and look for variation in practice;
- Gain pupils' views of their Numbers Count Lessons;
- Gain Numbers Count Teachers' views of the impact of the Numbers Count Lessons and areas for further development;
- Gain Year 2 Teachers' and Teaching Assistants' views of the impact of the Numbers Count Lessons and areas for further development;
- Observe Year 2 lessons after the Numbers Count Lessons to see how the Numbers Count pupils have reintegrated back into the main classroom.

**(6) Programme Management: this will assess the following key areas**

- Clarity of, and 'buy in to', the vision
- Integration with national policy; including, primary mathematics learning and teaching, personalisation, narrowing gaps in achievement, and achievement for all.
- Pedagogic links to Primary Framework
- National infrastructure for professional development (? but perhaps in section 5?)
- National infrastructure for quality assurance
- Preparation for possible national roll out 2010-11
- Collection and evaluation of on-going data collection
- Capture and transfer of effective practice at school and LA level
- Support and challenge for LAs
- Meeting key agreed milestones
- Effectiveness of communications policy
- Resourcing
- Key risks to programme now and in the future

## **RESEARCH ETHICS AND DATA MANGMENT**

Data processing and management will abide by current data protection regulations. All data will be stored on secure servers that are password protected. The York Trials Unit has over 10 years' experience of securely storing health related data and we will follow their standardised operating procedures for secure data storage. All electronic data can be held indefinitely. We will use the SRA research ethics framework.

## **1. Protocol for observation of face-to-face professional development sessions of Number Count Teachers**

Researchers will attend the face-to-face professional development sessions of Numbers Count Teachers in a number of Local Authorities. In total, 18 professional development sessions will be attended. The aims of observing these sessions are:

- Finding out how this aspect of the professional development is structured;
- Examining variation in professional development across different sessions;
- Providing formative feedback on what we find to be positive aspects of the professional development, and also what we feel could be improved.

Lying behind these particular aims is the overall aim of gathering background information on the professional development of Numbers Count Teachers, which in turn will inform the observation of Numbers Count Lessons elsewhere in the evaluation. As such, the outcomes of these observations will be a gathering of impressions by the researchers, rather than a comparison against specific aims, although some comparisons between professional development sessions will be made. Therefore, the observations will be carried out in an unstructured way, where field notes will be compiled from:

- Observations of the sessions;
- Comments from participants and trainers;
- Researcher impressions of the professional development activities.

The role of the researchers within these observations will be as an 'observer-participant' where participants in the professional development are aware of the researcher as an observer, and where participation in the professional development activities will be limited but not precluded.

As soon as possible following the observation of each professional development session, the field notes will be written up in the form of an observation report. Reports from different sessions will form the basis for analysing the professional development of Numbers Count Teachers overall and for making comparisons between professional development sessions.

## **2. Interviews with participating Numbers Count Teachers**

During the face-to-face professional development sessions, interviews with participating Numbers Count Teachers will be requested and carried out in 20 minute sessions arranged by the professional development providers. The interviews will be carried out with groups of Numbers Count teachers (ideally groups of three to make the interview manageable and to provide all interviewees the opportunity of putting across their views) in order to gain their impressions of the professional development. These will be carried out in such a way as to avoid as much as possible any disruption in the professional development activities (e.g. speaking with participants during breaks). It is anticipated that at least two groups of Numbers count teachers will be interviewed during a visit, and therefore, a minimum of 6 teachers will be interviewed during a visit. In addition, at the end of the training session, Teacher Leaders who have led the sessions will also be interviewed. With the permission of the interviewees, these interviews will be recorded and subsequently transcribed for analysis.

The interviews with Numbers Count Teachers will be semi-structured and will be based around the following questions:

- How did you come to be involved in Every Child Counts as a Numbers Count Teacher?
- How have you found the professional development so far, including the MA (where applicable), these training sessions, visits to colleagues and Teacher Leader visits?
- What are the particularly positive aspects of the professional development?
- What aspects of the professional development do you feel need developing still?
- How well do they feel prepared and how is the professional development helping them in the following areas:
  - Understanding of the early mathematics curriculum?
  - Understanding of how young children learn mathematics and barriers to learning?
  - The pedagogical skills required to enable young children with difficulties in mathematics to progress?
  - Making summative and diagnostic assessments of young children's mathematical development?
  - The subject knowledge and skills required in a 'whole-school' catalyst role (from September 2009 onwards)?
- Are there any other particular areas in which you would like further support?

The interviews with Teachers Leaders after the session will be semi-structured and will be based around the following questions:

- How have you found the provision professional development so far, including the MA (where applicable), these training sessions, visits to colleagues and Teacher Leader visits?
- What are the particularly positive aspects of the professional development?
- What aspects of the professional development do you feel need developing still?
- Are there any particular areas of providing professional development in which you would like further support?

These questions will be piloted during an initial visit to a professional development session with Numbers Count teachers and subsequently reviewed for clarity and appropriateness before carrying out other visits. A suggested pilot visit could be to the Cumbria and Lancashire LA professional development session on April 28<sup>th</sup>.

In carrying out the interviews, it will also be noted which training cohort the teachers are part of, so that any comments with regards to the training can be placed into the context of which cohort as well.

# **Visits to National Events for Every Child Counts Teacher Leaders**

## **1. Protocol for observation of face-to-face National Events for Every Child Counts Teacher Leaders**

Researchers will attend available National Events for Every Child Counts Teacher Leaders. The aim of observing these sessions are:

- Finding out how this aspect of the professional development is structured;

The observations will be carried out in an unstructured way, where field notes will be compiled from:

- Observations of the session;
- Comments from participants and trainers;
- Researcher impressions of the professional development activities.

The role of the researchers within these observations will be as an 'observer-participant' where participants in the professional development are aware of the researcher as an observer, and where participation in the professional development activities will be limited but not precluded.

As soon as possible following the observation of each session, the field notes will be written up in the form of an observation report.

## **2. Interviews with participating Every Child Counts Teacher Leaders**

During the National Events for Teacher Leaders, interviews with Every Child Counts Teacher Leaders will be requested and carried out in 20 minute sessions arranged by the event organisers. The interviews will be carried out with groups of Teacher Leaders (ideally groups of three to make the interview manageable and to provide all interviewees the opportunity of putting across their views) in order to gain their impressions of their roles as Teachers Leaders. These will be carried out in such a way as to avoid as much as possible any disruption in the professional development activities (e.g. speaking with Teacher Leaders at the end of sessions). It is anticipated that at least two groups of Teacher Leaders will be interviewed during a visit, and therefore, a minimum of 6 Teacher Leaders will be interviewed during a visit. In addition, at the end of the training session, National Teachers who have led the sessions will also be interviewed. With the permission of the interviewees, these interviews will be recorded and subsequently transcribed for analysis.

The interviews will be semi-structured and will be based around the following questions:

- How did you come to be involved in Every Child Counts as an Every Child Counts Teacher Leader?
- Could you reflect on all aspects of your own professional development and say how they are finding it?
  - What are the particularly positive aspects of the professional development?
  - What aspects of the professional development do you feel need developing still?
- How well do you feel prepared for your role as an Every Child Counts Teacher Leader? Specifically:
  - Professional development of Numbers Count Teachers.
  - Ongoing support for Numbers Count Teachers.

- Your role within your employing local authority.
- Understanding of the early mathematics curriculum?
- Understanding of how young children learn mathematics and barriers to learning?
- The pedagogical skills required to enable young children with difficulties in mathematics to progress?
- Putting in place the summative and diagnostic assessments involved in the Numbers Count programme?
- Supporting Numbers Count Teachers in a 'whole-school catalyst' role?
- How well do you think the professional development of Numbers Count Teachers has gone so far? What have been the positive aspects of the professional development?
- What areas of the professional development do you think need developing still?
- What is your role in the local authority? How well are you being managed and supported by the Local Authority?
- Are there any other particular areas in which you would like further support?

## Online Survey

### **1. Online survey of Numbers Count Teachers**

Following on from the observations of professional development and interviews with participants, all Numbers Count Teachers will be asked to complete an online survey looking again at their experiences of the professional development, how well the professional development has prepared them for their role, and any particular difficulties that they have experienced in their role. The online survey will be administered through the Bristol Online Survey (BOS) facility. The survey questions, which will be a mix of Likert-scale questions and more open-ended questions, will be based on the issues raised during the previous observations/interviews. As such, the main aim of the online survey will be to confirm that the issues highlighted previously by the process evaluation are indeed general issues for the majority of Numbers Count Teachers in the Every Child Counts initiative. We recognise that the professional development providers will be using an online questionnaire as well, so we need to liaise with them so as to reduce unnecessary overlap between the questionnaires as much as possible. In addition, the survey will also be used to see if perceptions have changed between Numbers Count teachers experiencing the professional development sessions in the different cohorts 2008/09 and in 2009/10 (i.e. have the sessions developed?).

The survey will be designed and implemented after the initial round of observations and interviews (i.e. up until June 2009), so this will be implemented in July 2009. Draft questionnaires will be made available for comment and consideration to the project operational group by the end of June 2009. They will also be submitted to the Ethics Committee for approval. In order to measure changes in perceptions with different cohorts, the online questionnaire will be implemented again in July 2010 with Numbers Count Teachers attending the professional development sessions during this period.

From this survey, we would expect at least a 50% response rate. Reminders will be sent out to all Numbers Count teachers on three occasions (end of July in a particular year and again in mid-August and again just after start of term in September) – assistance for contacting Numbers Count teachers will be requested from the professional development providers. A constant monitoring of the response rate will be carried out as this is available from the BOS system. If there is a concern over non-response bias, this could be tackled in a number of ways. Firstly, we can compare the characteristics of the responding sample to the population to see that we have a representative group (in terms of characteristics as least). We could also do a follow up with a small number of non-respondents (letter/postcard maybe followed by phone call) to check on reasons for non-response.



## **Visits to schools to observe Numbers Count Lessons**

### **1. Protocol for interview with Numbers Count Teacher prior to the lesson observation**

18 schools will be visited in order to observe the Numbers Count lessons in schools. Prior to the observation of the daily 30-minute lessons with the pupils, specific background information will be obtained from the Numbers Count Teacher. This will include the stage that the school and the Numbers Count teacher is at, for example, how many cohorts of children have already been through the Numbers Count intervention, and which cohort of trainees the Numbers Count teacher is from. This will be to take into account some of the variations between schools over the three different terms when school visits will take place. This interview will be recorded so that the researcher can place the lesson observations in a more complete context.

1. How many cohorts of pupils have previously experienced the Numbers Count interventions?
2. What criteria were used to select the pupils for Numbers Count?
3. For those children currently chosen for the intervention, what did the results of the baseline measure of the pupils' attainment and attitude reveal (request for documentation)?
4. What did the classroom observations of the children reveal (request for documentation)?
5. What did the Numbers Count diagnostic assessment for the pupils reveal (request for documentation)?
6. If appropriate, with reference to your records for the children, how have the children progressed in the four strands of mathematics and in terms of their attitude and confidence?
7. With reference to your plans for the pupils concerned and your lesson plans, what are the learning objectives for the lessons?
8. What home activities are planned for the children and parents to complete together?
9. Are there any specific issues that the Numbers Count Teacher feels that the researcher should look out for in the observations?

### **2. Protocol for lesson observations with the Numbers Count Teacher and pupils**

The observations of lessons with the Numbers Count Teacher and pupils will be carried out in a participant observation, specifically, with the 'observer-as-participant' where the pupil and teacher are aware of the researcher, but with the intention that there will not be extensive involvement of the researcher in the lesson. The data collected during the observation will be field notes, designed to provide an account of what happens during the lesson. The taking of the field notes will be structured in order to enable a focus on the key expected features of a Numbers Count lesson as highlighted in the Numbers Count handbook, as well as being a record of the lesson. Therefore, the field notes will be recorded on the following pro-forma. The record of the lesson is structured in the same manner as the Numbers Count Lesson plan so that the structure of the lesson can be followed more easily. It is anticipated that at least two observations of lessons will be carried out during any one visit.

Observation Record of the Numbers Count lesson

**Date:**

**School:**

**Numbers Count Teacher:**

**Pupil:**

| <b>Time of start of activity</b> | <b>Learning Focus</b>                    | <b>Learning Episodes</b> | <b>Reflection of observer and teacher</b> |
|----------------------------------|--|--------------------------|---|
|                                  | <b>Familiar Activity</b>                 |                          |   |
|                                  | <b>Counting activities</b>               |                          |   |
|                                  | <b>Current Learning Activity 1</b>       | <b>Objective:</b>        |   |
|                                  | <b>Current Learning Activity 2</b>       | <b>Objective:</b>        |   |
|                                  | <b>Further Application Opportunities</b> |                          |   |
|                                  | <b>Reflection</b>                        |                          |   |
| <b>Further notes</b>             |  |                          |   |

Observation on the key features of the Numbers Count lesson

| Features                                  | Observations | Reflection of observer and teacher |
|---|--------------|------------------------------------|
| Focus of the lesson                       |              |                                    |
| Lesson environment                        |              |                                    |
| Structure                                 |              |                                    |
| Progression                               |              |                                    |
| Balance of activities                     |              |                                    |
| Resources                                 |              |                                    |
| Contextualisation                         |              |                                    |
| Pupil involvement                         |              |                                    |
| Pupil enjoyment                           |              |                                    |
| Pupil success/<br>impact on pupil         |              |                                    |
| Interaction including praise and feedback |              |                                    |
| Overall atmosphere of the lesson          |              |                                    |

Following each observation, the researcher will discuss with the Numbers Count Teacher the teacher's views of the lesson, e.g. whether they felt the lesson went well and why, so that the teacher's views can be incorporated and used to inform the researchers' observations.

### **3. Protocol for interview with pupils following the lesson observations**

Following the Numbers Count lessons observations, pupils involved in Numbers Count will be interviewed, ideally as one group of four children. The interview will be audio-recorded with the permission of the Y2 teacher and the pupils themselves. The interviews will be semi-structured, with the interview organised around the following questions:

1. What kind of things do you do in the lessons with Mr/Mrs .... (Numbers Count Lessons)?
2. How is this different to your lessons with the rest of the class?
3. How do you feel about having these lessons with Mr/Mrs ....?
4. What are the best things about these lessons?
5. What things do you not like about these lessons?
6. What do you learn in these lessons?
7. What maths can you do now that you could not do before?
8. Has the way you feel about maths changed because of these lessons? If so, how?
9. Do you think it is a good idea to have these lessons? Could they be made any better?
10. Is there anything else you would like to say about these lessons?

The aim of these interview questions is to try and ascertain their present views on being involved in Numbers Count Lessons.

The interview with the pupils will be transcribed from the recording. This transcription will then be used in the analysis of pupil interviews.

### **4. Protocol for interviews with Numbers Count Teacher**

A separate interview will be carried out with the Numbers Count Teachers in order to gain their views of being part of Every Child Counts. Background information on which cohort of trainees the Numbers Count teacher is from will also be obtained, to take into account some of the variations between schools over the three different terms when school visits will take place. The interviews will be semi-structured and will examine the following issues:

- What has been the teacher's experience so far of providing this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Do the children seem to be making progress as a result of the intensive support?
- What do the schools do to maintain any gains in children's progress?
- What is the teacher's opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?
- What do you think about the intervention being used with small groups of pupils rather than individuals?
- What professional development are you having as a Numbers Count teacher?

- Which cohort of Numbers Count teacher training were you from?
- Do you feel that the professional development provided to you prepared you adequately as a Numbers Count Teacher?
- What aspects of the professional development have you found most useful so far? For example, the MA (where applicable), face to face training, visits to colleagues, Teacher Leader visits.
- Are there particular areas in which you would like further support?
- Have you had enough opportunities to liaise with colleagues in the school and with parents about what you are doing with Numbers Count? What successes have you had and what barriers have you faced?
- Has Numbers Count had any wider benefits for colleagues or parents?
- What support have you had from other members of the school community, e.g. Head Teacher, classroom teacher? Would you like any further support?
- What support have you had from parents? Would you like any further support?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

# **Visits to schools to observe Year 2 mathematics lessons when pupils graduate from the Numbers Count programme**

## **1. Protocol for interview with Y2 teacher and Numbers Count Teacher prior to the lesson observation**

9 schools will be visited to observe Y2 lessons following the reintegration of Numbers Count graduate pupils into their mainstream lessons.

These schools will be chosen randomly from the schools visited the first time around, with the aim of following up children that were observed in the Numbers Count lessons. It is therefore expected that the second visit will take place about 10 weeks after the initial visit. However, the timing of the visits will be agreed with schools in case children have had Numbers Count lessons for more than 12 weeks, and it is appropriate to delay the second visit to take this into account.

Prior to the observation of the Y2 lessons involving pupils who have graduated from Numbers Count, specific background information will be obtained from the Numbers Count Teacher and the Y2 teacher. This interview will be recorded so that the researcher can place the lesson observations in a more complete context.

1. What did the results of the baseline measure of the pupils' attainment and attitude reveal (request documentation)?
2. What did the results of the exit assessments of the pupils' attainment and attitude reveal (request documentation)?
3. What did the Numbers Count Exit record reveal?
4. Have there been any follow-up assessments?
5. In the view of the Y2 teacher, what has been the pupils' experience of mathematics lessons following Numbers Count, with respect to attainment and attitudes?
6. Are there any specific issues that the Y2 teacher feels that the researcher should look out for in the observations?

## **2. Protocol for lesson observations with the Y2 and pupils**

The observations of lessons with the Y2 teacher and pupils will be carried out in a participant observation, specifically, with the 'observer-as-participant' where the pupils and teacher are aware of the researcher, but with the intention that there will not be extensive involvement of the researcher in the lesson. The researcher will concentrate on the four recent graduates from the Numbers Count Lessons. The data collected during the observation will be field notes, designed to provide an account of the involvement of the pupils concerned. The taking of the field notes will be structured in order to enable a focus specifically on the pupils' learning rather than the teaching. Therefore, the field notes will be recorded on the following pro-forma. The record of the lesson is structured in the same manner as the Classroom Observation Record in the Numbers Count handbook, so that comparisons can also be made more easily with how pupils cope in lessons before and after the Numbers Count lessons. It is anticipated that during any observation, more than one child may be being observed at a time (i.e. those that have recently experienced Numbers Count Lessons).

Observation Record of the Y2 lesson

Date:

School:

Y2 Teacher:

Pupils:

| <b>Mathematics Lesson Phase and content</b>                               | <b>Observations</b> | <b>Reflection of observer and teacher</b> |
|---|---------------------|---|
| <b>Whole class teaching</b><br><br><b>Content:</b>                        |                     |   |
| <b>Adult-led small group teaching</b><br><br><b>Content:</b>              |                     |   |
| <b>Working with other children, without adults</b><br><br><b>Content:</b> |                     |   |
| <b>Working unaided alone</b><br><br><b>Content:</b>                       |                     |   |
| <b>Further comments</b>   |                     |   |

Following each observation, the researcher will discuss with the Year 2 teacher their views of the lesson, so that the teacher's views can be incorporated and used to inform the researchers' views.

### **3. Protocol for interview with pupils following the lesson observations**

Following the Numbers Count lessons observations, pupils involved in Numbers Count will be interviewed, ideally as one group of four children, and with their Y2 teacher present. The interview will be audio-recorded with the permission of the Y2 teacher and the pupils themselves. The interviews will be semi-structured, with the interview organised around the following questions:

1. Having finished the lessons with Mr/Mrs..., how did you feel about having these lessons with Mr/Mrs ....?
2. Having had the lessons, what things can you do now that you couldn't do before in maths?
3. Do you feel more confident in your maths lessons? Do you enjoy your maths lessons more? Why is that do you think?
4. Do you think it is a good idea to have these lessons for pupils? Could they be made any better?
5. Is there anything else you would like to say about these lessons?

The aim of this interview with the pupils will get them to reflect on the impact of the Numbers Count lessons, in particular the impact the lessons have on their current learning of mathematics.

The interview with the pupils will be transcribed from the recording. This transcription will then be used in the analysis of pupil interviews.

### **4. Protocol for interviews with Y2 teacher**

A separate interview will be carried out with the Y2 in order to gain their views of Every Child Counts. The interviews will be semi-structured and will examine the following issues:

- What has been the teacher's experience so far of this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Have the children generally made progress as a result of the intensive support?
- How are the children coping with their maths lessons following the intervention, both in terms of their enjoyment and attainment?
- Have the children made further progress/maintained their gains since they received Numbers Count support?
- Have there been any changes with respect to other subjects?
- Has the teacher had the opportunity to observe Numbers Count Lessons?
- What is the teacher's opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?



- What opportunities have there been for the Numbers Count Teacher to liaise with colleagues in the school and with parents about what they are doing with Numbers Count?
- Has Numbers Count had any wider benefits for yourself,
- What benefits has it had on colleagues?
- Have there been benefits from Numbers Count for parents?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

## **5. Protocol for interviews with Y2 teaching assistants**

A separate interview will be carried out with the Y2 teaching assistants in order to gain their views of Every Child Counts. The interviews will be semi-structured and will examine the following issues:

- What has been their experience so far of this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Have the children made progress as a result of the intensive support?
- How are the children coping with their maths lessons following the intervention, both in terms of their enjoyment and attainment?
- Have the teaching assistants had the opportunity to observe Numbers Count Lessons?
- What is their opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?
- Has Numbers Count had any wider benefits for yourselves or for other teaching assistants?
- Has Numbers Count had any benefits for parents?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

### **(3) Organisational - School level interview guide**

*Assume with head or other senior staff but preferably not the link teacher.*

The themes and questions below have been primarily derived from the research specification and communications to schools from ECC, including the Numbers Count Standards and Requirements 2008-2009. These have been divided in to sections (underlined) and some are in the form of direct questions where as others seek the respondents views / invite comments in a more neutral way.

#### **Key Evaluation Criteria:**

The criteria below will be primarily used to guide the evaluation the issues surrounding the impact and organisation of ECC at the school level.

- The school's context and heads knowledge of ECC
- Views on their NT teacher including training and preparation
- Recruitment and support
- Organisational (school level) issues
- Resourcing issues
- Wider staff involvement
- Perceived programme impacts (including beyond individual child's maths)
- Key challenges
- Future developments of model

#### **1 Introduction (with interviewee)**

- With reference to the schools letter briefly outline and discuss key and overarching aims of research.
- Clarify interviewee's knowledge of ECC / NC – provide further explanation as required.
- Emphasise programme is at a developmental stage and their views are important
- Emphasise semi- structured and open ended exploratory / discursive nature questions.
- Confirm anonymity of responses, seek permission to record.

#### **2 Context / Background**

*Aim – understand the context within which the school operates, including any specific issues regarding mathematics teaching.*

#### **Questions / Discussion / Prompts:**

- Agree a thumbnail sketch of school and context (pre read Ofsted report)
- Confirm numbers of pupils receiving NC
- Seek an overall 'set the scene' snapshot view of the programme
- Identify any other specific initiatives school is involved in (including ECAR and KS2 one to one – briefly compare the two systems, and any interactions between them
- Details of the background of the NC teacher, and how this affects their role
- The NC teacher's role (if any) beyond NC, and impact
- How and by whom is the NC teacher managed and supported on a day to day basis

### **3 Numbers Count Teachers**

*Aim – understand and build a picture of the issues surrounding the recruitment and professional development of NC teachers. Identify and if necessary explore any issues with regard ‘duality’ of employment and control.*

#### **Questions / Discussion / Prompts:**

- Clarify recruitment procedures and availability of suitable NC teachers
- The background and role of NC teachers outside of NC lessons
- Views on general approach and preparedness of the NC teacher for the task
- Views on how well they appear to have been trained
- Views on the quality of on-going support they receive, including from the local authority, the school and from their TL
- Views on how well they have integrated / been accepted by other staff (be aware of internal appointments)
- Have there been any significant issues in terms of control and direction of NC teachers (including who and how managed)?
- Look for and discuss examples of NC teacher providing wider school benefits (formal and informal)

### **4 Support and Links**

*Aim – understand how well schools feel they have been made aware of the commitments, the support they receive and how they link with other organisations.*

#### **Questions / Discussion / Prompts:**

- Why / how did your school come to be involved in ECC – (ie. how made aware)?
- Views on the initial understanding of requirements / commitment by the school
- Has this proved realistic? (seek reasons where not)
- Views on the ‘Contract’ and Standards and Requirements documents (if appropriate ways in which could be improved / enhanced)
- Views on the Teacher Leader role
- Details and views on termly heads network meetings
- Views on the feedback from LA on programme impact and pupil attainment
- Details of further support from LA (including to relevant local initiatives)

### **5 School level Organisation**

*Aim – build an understanding of the organisational impacts and issues for schools who adopt ECC*

#### **Questions / Discussion / Prompts:**

- Views on the selection process – are you happy with the guidance in the handbook,
- With hindsight have any children been missed that should have been selected?
- Views on the Link Teacher (LT) role
- Does the LT receive appropriate support within the school for their role? (also consider links to LA and TL)

- Are you aware of any issues regarding collecting and submitting NC data?
- How do you use the performance data you receive back (above and LA)?
- Could this be improved in any ways?
- What has been the reaction of parents of NC children to the programme?
- Do staff and children view NC as a normal part of school life?
- Outline any ways in which NC children are supported once having completed the programme?
- Does ECC overlap with any other initiatives such as ECAR or one-to-one KS2 tuition? And what are the implications?

## **6 Resourcing**

*Aim – understand better the requirements on schools including any hidden costs*

### **Questions / Discussion / Prompts:**

- Have there been any problems providing a suitable learning area?
- Are there any other indirect or unanticipated costs or resources associated with supporting ECC?
- Are there ways in which NC resources have been used elsewhere in the school / teaching process?
- Have there been any issues regarding funding the school's contribution?
- Do you anticipate that this will be sustainable?

## **7 Staff Commitment / support**

*Aim – the model requires an integrated and supported approach with a number of staff being involved, this sections seeks to understand the implications for schools*

### **Questions / Discussion / Prompts:**

- How much support do you / other senior colleagues / other staff need to give for the effective operation of the programme?
- Do other teaching and support staff have a good knowledge of the NC programme?
- Have other staff observed / supported NC sessions?
- Other ways in which head / others support the NC teacher to enhance the programme
- How is the process of deciding which KS1 children need which interventions/monitoring their progress/evaluating the impact of different interventions managed in school – who is involved and how?

## **8 Perceived Impacts**

*Aim – gain the heads perspective of the impact of the programme both for individual children, and the school more generally*

### **Questions / Discussion / Prompts:**

- In general how have the children taking part found the experience?
- Discuss specific positive experiences for individual children
- Discuss specific negative experiences for individual children

- Discuss positive wider impacts
- Discuss negative wider impacts

## **9 Challenges**

*Aim – develop an understanding of the most significant challenges schools have faced, and the strategies they applied to overcome them*

### **Questions / Discussion / Prompts:**

Invite discussion on some of the key challenges the school has faced – consider:

- Root causes
- Are they specific (school level) or system (ECC)
- Do they interact / interfere with other initiatives and priorities (eg funding)
- Way forward

## **10 Future development**

*Aim – provide opportunity for interviewees to influence the development of the programme.*

### **Questions / Discussion / Prompts:**

- Views on what could be changed and why / how
- Views on a small group approach
- Views on TA involvement (including wave 2)
- Do you envisage continuing with ECC? What factors would influence your decision?

**Parent Interview Guide** – to be developed following initial school level (teaching and organisation) interviews and research. It is expected that this will be done after four school visits, as this would give sufficient information so as to identify the key issues (from the school staff) and then inform and guide the parental interview protocols.

**Parent On-line Survey** – to be developed following the first three parental interviews. This will also be informed by the emerging issues identified during the school visits.

## **(4) Local Authority Organisation and Infrastructure**

**Local Authority Officers:** We will seek to understand the implications and impact of ECC at the LA level. Importantly we will explore how the programme aligns and fits with their existing plans and aspirations, as well as considering relevant resourcing, support and funding issues; how the teacher leader is supported and managed within the local authorities; and the teacher leader's role within the authority. Face to face semi-structured interviews will take place with key officers from the six LAs. We would seek to include officers with interests in mathematics teaching as well as inclusion. We would include as far as possible the relevant TL (this would be in addition to the planned PD events). We would where possible carry out the interviews (possibly in a group format) within existing meeting frameworks so

as to reduce the burden on the LAs, and also if possible we would hope to carry out a number of 'inter-LA' group interviews, for example, within the existing ECC cluster format up to summer 2009, and in the LA consortia meetings after that. .

**Non opt in schools:** Through our LA contacts we would seek to interview a number of heads from schools which had chosen not to opt in to Every Child Counts. Besides being interested in why they did not feel that the programme was relevant, we would be interested in alternative ways in which they were able to meet the needs of their lowest performing children.

### **Key Evaluation Criteria:**

The criteria below will be primarily used to guide the evaluation of the issues surrounding the impact and organisation of ECC at the school level:

- LAs general views on the ECC programme and NC intervention
- Position of ECC in school improvement children services planning
- Alignment with existing primary strategy plans and initiatives
- Knowledge and awareness of ECC by other LA personnel (including support advisers)
- Recruiting and supporting schools
- Head teacher communication systems (including new heads induction programme)
- Allocation and targeting of funding
- Monitoring and evaluation systems
- LA self evaluation system for ECC
- Supporting NC teacher to provide support to their schools for a 'layered model of intervention'
- Ongoing professional development of NC teachers
- Consortium working between TL
- Management and support of TLs

### **Local Authority interview plan – to be developed**

#### **(5) National training and support**

This will focus on the national level training and support to Teacher Leaders, and will include quality assurance processes and the data collection systems. Views would be gathered from key people with one to one interviews, and where appropriate group interviews.

This aspect of the research would commence after the school and LA elements, and some of the key research criteria would be informed by the emerging findings.

## (6) Programme Management

There are four key partners in terms of the management of the programme – DCSF, The National Strategies, the Every Child a Chance Trust and Edge Hill University. Until September 2010, responsibility for the programme is shared between these partners. Contact will be made and maintained with key people from these groups – as advised by the project manager / steering group.

Evaluation Criteria will include:

- Clarity of, and 'buy in to', the vision
- Integration in to national policy; including, primary mathematics learning and teaching, personalisation, narrowing gaps in achievement, and achievement for all.
- Pedagogic links to Primary Framework
- National infrastructure for professional development (? section 5?)
- National infrastructure for quality assurance
- Preparation for possible national roll out 2010-11
- Collection and evaluation of on-going data collection
- Capture and transfer of effective practice at school and LA level
- Support and challenge for LAs
- Meeting key agreed milestones
- Effectiveness of communications policy

### Reporting:

There would be three key aspects to the reporting, on-going or formative feedback, the final report, and a policy seminar.

**On-going / formative reports.** These would be based on the emerging findings. The general format for the school level reports will be in line with the interview structure. Where appropriate additional sections will be provided, for example, to allow for unanticipated responses. They will be written in a concise style, and will be forwarded to the project manager as and when a reasonably reliable findings emerge. We would anticipate that they would be 'presented' and discussed at the routine steering group meetings, and we would seek to provide illustrative examples, of the various points although not specific case studies.

**Final Report.** This will be produced in association with the results from the quantitative findings. A number of case studies where appropriate will be produced from the evidence which has been collected through the process evaluation. The final format will be agreed with the steering group.

**Policy Seminar.** The format to be agreed with the steering group.

**Appendices**

**Appendix A: Data protection issues document**

**Appendix B: Letter to schools**

**Appendix C: Information Sheet and opt-out consent for parents**

**Appendix D: Information sheet/consent form for National Trainers/Teacher  
Leaders/Head teachers/NC teachers**

**Appendix E: Information Sheet for Children**



## **Appendix A: Data protection issues document**

### **Evaluation of Every Child Counts**

#### **Data Protection Procedures**

The level of security necessary for this evaluation is '**RESTRICTED**'. This is because it is an evaluation of a sensitive policy intervention. Compromise of data collected and analysed in the evaluation could disadvantage the government in policy development, or could cause distress to individuals.

Below we provide a detailed general statement on our data security policy during data collection and analysis and arrangements for the safe and secure transfer of data. In addition we provide detailed specific arrangements for the process evaluation phase, including details of in-house security at Durham. These measures will ensure that we comply with the Data Protection Act 1998.

##### **Detailed general statement**

Durham University shall observe its obligations under the Data Protection Act 1998 and shall comply at all times with the Act.

All hard and electronic data will be marked 'Restricted'. We will store all hard data at Durham protected by at least two barriers within a secure building (locked filing cabinet or container within locked office in secure building). When we dispose of the hard data we will either shred within the office or dispose through the waste disposal bags marked 'confidential disposal'. All electronic data will be stored on restricted access/password protected files. Access will be restricted to members of the evaluation team (4 core members). When we dispose of electronic data we will delete all copies including data stored on USBs. If we need to transfer the data internally we will do so by e-mail or in double sealed envelopes; if we need to transfer data between the two institutions we will do so either by e-mail or by special delivery or secure courier. Discussions about the restricted data will always take place face-to-face and not on the telephone. Data will not be faxed. If any of the core team members or when travelling this will only be permitted with one of the lead applicants' permission, and compliance with all measures above will be required. Photocopying will be permitted, but this will be restricted to essential copies only and circulation will be restricted.

##### **Detailed specific arrangements**

###### **Process evaluation: Fieldwork notes (and contact details)**

This will involve:

- Lesson / Classroom observations
- Teacher professional development observations / interviews
- Teacher and other school staff interviews
- Local Authority Officer interviews

- Professional development Provider Interviews
- Every Child Counts management interviews

**No identifiable data will be collected for any children.** Identifiable data in the form of names and contact details (address and telephone number) will be used throughout the project for adults who agree to contribute to the research (note: informed written consent will be sought and obtained from all participant adults.) Identifiable data will be in written and computer form. All details will be destroyed 6 months after completion of the project. Those details (written or computer) will be kept personally and exchanged between the two Durham researchers.

Field notes made during the course of the research will identify the name of the school and where appropriate relevant staff. **Children's names (or indefinable data) will not be collected.** Notes will be made in handwritten or computer form, and electronic recordings of interviews will only be made if specific agreement is given by all of the people involved.

Electronic data (including any sound recordings) will be stored on access protected personal computers and only authorised Durham or York staff will have access (4 core team members AW, PB, CT and HA). Backups will be made on secure servers at Durham. Written notes will be stored when not in use in locked filing cabinets. Generally these will be copied to computer files, after which the notes will be destroyed. Any hand written notes not transferred will be destroyed six months after the end of the project. Electronic data will be retained on the secure servers at Durham for 6 months after the end of the project.

## **Appendix B: Letter to schools**

Dear (Head teacher)

### **Evaluation of Every Child Counts**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to evaluate the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are two parts to this evaluation - firstly an impact evaluation of the progress made by the children using test data, and secondly a more general and qualitative assessment of the implementation of the ECC programme and the process in 18 ECC schools.

We would be very grateful if you would agree to help with this second part – the process evaluation. This is of course voluntary but we hope that you will be willing to take part in this important study which will be used to help improve the ECC programme.

### **What we want to find out**

We aim to identify issues, positive and negative, about the programme. These will be fed back in a formative way to those responsible for the development and implementation of ECC, and will go on to form the basis of a research report for the DCSF. Unless specifically agreed this feedback will be anonymous. We will also look at other aspects of the process, such as the professional development and the role of local authorities.

In essence for our work with you we would like to understand how ECC is being implemented in your school, and ways in which the national programme might be improved.

### **What we would like from you**

Two Durham based researchers will take primary responsibility – Patrick Barmby and Andy Wiggins. Both have been teachers and are involved in teacher professional development. Patrick who is a mathematics expert will focus on the actual teaching process and classroom work, and Andy will focus on infrastructure and organisational issues.

We would like to make a number of visits to your school – this would be on a maximum of three days between January 2009 and June 2010. Where appropriate we would also like to make and maintain telephone and / or email contacts with relevant staff.

### **Arrangements**

Prior to any visit we will outline and agree with you what we would like to see, including agreeing any access to your staff, children (we will not interview children on their own) and parents. More specifically we would want to:

- Observe some Numbers Count sessions and the subsequent reintegration of children into their day to day class teaching
- Talk with Numbers Count teachers
- Talk to classroom teachers / support staff
- Meet with some of the parents/carers of the children involved (possibly in a group setting)
- Talk to other staff in the school including yourself and your leadership team.

### **Further details or questions?**

In the first instance please contact, Andy Wiggins or Patrick Barmby - contact details below:

We very much hope you are able to help us with this and please do confirm your willingness to take part, and we look forward to meeting with you.

Yours sincerely

Andy Wiggins and Patrick Barmby

Phone: 0191 334 4248

Email: [andy.wiggins@cem.dur.ac.uk](mailto:andy.wiggins@cem.dur.ac.uk)

## Appendix C: Information Sheet and opt-out consent for parents

Dear Parent

### Evaluation of Every Child Counts

The Universities of York and Durham have been asked by the government - Department for Children, Schools and Families (DCSF) - to evaluate the Every Child Counts (ECC) programme between now and summer 2010.

As part of this evaluation we would like to observe some of the Numbers Count sessions your child might be doing. We may also like to talk to your child (together with their teacher) about the sessions and how they may be helping with their understanding of mathematics.

These observations and discussions will be led by Patrick Barmby from Durham University who is both an experienced teacher and a teacher trainer, as well as an expert on the teaching of mathematics to young children. All of the observations or discussions will be very sensitively carried out, and if at any time your child is unhappy or does not want to continue we will immediately discontinue the interview. We have also written explaining this to your child's school and teachers.

We will not keep or pass on to anyone else (including the DCSF) your child's name or any means of identifying them.

We very much hope that you are happy for us to do this, as it will be very useful for schools and the DCSF to help improve the programme – however should you not want your child to take part please complete the slip below and return it to the school.

Many thanks

Should you require any further details please contact Andy Wiggins 0191334 4248 or [ecc@cem.dur.ac.uk](mailto:ecc@cem.dur.ac.uk)

Andy Wiggins (Durham Project Lead – ECC evaluation)

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### EVERY CHILD COUNTS – Evaluation

**Parental opt-out (please only complete if you do NOT wish your child to be part of the evaluation)**

To: ..... (insert name of school)

I do not want my child ..... (insert name of child) to be a part of the process evaluation of Every Child Counts.

Name..... Date.....

## **Appendix D: Information sheet/consent form for National Trainers/Teacher Leaders/Head teachers/NC teachers**

Dear.....

### **Evaluation of Every Child Counts**

The Universities of York and Durham have been commissioned by the Department for Children, Schools and Families (DCSF) to evaluate the impact and delivery of the Every Child Counts (ECC) programme between now and summer 2010. There are two parts to this evaluation - firstly an impact evaluation of the progress made by the children using test data, and secondly a more general and qualitative assessment of the implementation of the ECC programme and the process in 18 ECC schools.

We would be very grateful if you would agree to help with this second part – the process evaluation. This is of course voluntary but we hope that you will be willing to take part in this important study which will be used to help improve the ECC programme.

#### **What we want to find out**

We aim to identify issues, positive and negative, about the programme. These will be fed back in a formative way to those responsible for the development and implementation of ECC, and will go on to form the basis of a research report for the DCSF. Unless specifically agreed this feedback will be anonymous. We will also look at other aspects of the process, such as the professional development and the role of local authorities.

In essence for our work with you we would like to understand how ECC is being implemented, and ways in which the national programme including Numbers Count might be improved.

#### **What we would like from you**

Two Durham based researchers will take primary responsibility – Patrick Barmby and Andy Wiggins. Both have been teachers and are involved in teacher professional development. Patrick who is a mathematics expert will focus on the actual teaching process and classroom work, and Andy will focus on infrastructure and organisational issues.

Between January 2009 and June 2010 we will make a number of visits to schools and direct contacts with Teacher Leaders and National Trainers. Where appropriate these will be followed up with further telephone calls and / or emails.

#### **Arrangements**

Prior to any school visit we will outline and agree with you what we would like to see, and the scope of our questions and discussion topics. Interviews with National Trainers and Teacher Leaders will be organised and agreed on a case by case basis.

#### **Further details or questions?**

In the first instance please contact, Andy Wiggins or Patrick Barmby - contact details below:

We very much hope you are able to help us with this and should you not wish to take part please let us know when we first make contact with you.

Yours sincerely

Andy Wiggins and Patrick Barmby

Phone: 0191 334 4248  
Email: [eec@cem.dur.ac.uk](mailto:eec@cem.dur.ac.uk)

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**EVERY CHILD COUNTS – Evaluation**

**National Trainer/Teacher Leader/Head teacher/NC teacher consent**

I ..... (insert name) give consent to be a part of the process evaluation of Every Child Counts.

..... (insert whether National Trainer/Teacher Leader/Head teacher/NC teacher)

Name..... Date.....

## **Appendix E: Information Sheet/consent form for Children**

### **Evaluation of Every Child Counts**

#### Information for children

*To be read in conjunction between the Numbers Count Teacher and the Numbers Count Pupil: See also the teacher information sheet to explain any other points*

The Universities of York and Durham have been asked by the government – the Department for Children, Schools and Families (DCSF) to look at the Every Child Counts (ECC) programme. As part of this a person (a researcher) will visit your school and may want to watch your lesson. This person might also like to talk to you and your teacher about how you find maths and your Numbers Count lesson. We would like to do this so as to help the people who have designed Number Count to improve it, and make it better for other children.

If you would rather the person from the University didn't see your lesson or talk to you and your teacher that's perfectly all right, and you can let your teacher know now. Also, if, during their visit you would like them to stop talking with you, you can tell them or your teacher.

NB: Confirmation will be sought by the Durham researcher with the child (in the teacher's presence) that they understand the purpose of the research and that they are happy to take part. The researcher will look out for any signs of discomfort from the child and if necessary seek assurance that the child is happy to continue, or will finish the interview at that point. The Teacher too will be in a position to discontinue the contact or discussion.

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## Appendix F: Group Work LAs - for discussion 3 June 2009.

We would propose carrying out 'light touch' evaluation in two LAs which are piloting the group work option. As far as possible this would be carried out in a similar way to the one-to-one so as to provide a fair and reasonable basis for comparison.

More specifically we recommend the following alterations to the fieldwork timetable and time allocations.

| Fieldwork   | Summer term 09  | Autumn term 09  | Spring term 10   | Summer term 10   |
|---|---|---|--|--|
| <b>Learning process</b>   |   |   |  |  |
| Observation of Numbers Count training/interviews with Numbers Count teachers/interviews with Teacher Leaders. The intention is to attend a range of Cohort 1 and Cohort 2 training sessions, amounting to 16 regional and 2 national training sessions. | 4 sessions  | 8 sessions (inc any group work training)                                | 6 sessions (inc any group work training)                               |  |
| Online survey   |   | First implementation  |  | Second implementation  |
| <b>One to one:</b> First school visits (interview with Numbers Count teacher; session observation; pupil interviews)  | 4 schools in 4 LAs  | 8 schools in 6 LAs  | 2 schools in 1 LAs   |  |
| <b>One to One:</b> Second school visits (reintegration observation; Y2 teacher and teaching assistant interviews; pupil interviews)   |   | 3 schools in 3 LAs  | 2 schools in 1 LAs   | 2 schools in 1 LAs   |
| <b>Group:</b> First school visits (interview with Numbers Count teacher; session observation; pupil interviews)   |   |   | 4 Schools in 2 LAs   |  |
| <b>Group:</b> Second school visits (reintegration observation; Y2 teacher and teaching assistant interviews; pupil interviews)  |   |   | 1 School in 1 LA   | 1 school in 1 LA   |
| <b>Organisational aspects</b>   |   |   |  |  |
| <b>One to One:</b> School level (headteacher interviews; parent interviews; parent survey)  | 4 heads, and aim for 9 parents (per school), group, individual or phone | 6 heads, and aim for 9 parents (per school), group, individual or phone | 2 heads and aim for 9 parents (per school), group, individual or phone |  |
| <b>Group:</b> School level (headteacher interviews; parent interviews)  |   |   | 2 Heads and aim for 9 (per school) parents group, individual or phone  | 1 Head and aim for 9 (per school) parents group, individual or phone |

## Appendix 2: Description of the Numbers Count Intervention

### *Introduction*

In this document, we provide a description of the Numbers Count intervention, including the lessons for pupils and the support process for Numbers Count Teachers. In addition, a brief description of the perceived benefits and areas of development for the intervention will be given. These perceptions are built up from observations carried out by the researcher during the process evaluation (observations of lessons and teacher training), and also from the survey of Numbers Count Teachers carried out at the end of 2009.

### *The Numbers Count Lessons*

Prior to the start of the intervention process, pupils are selected to receive the intervention based on their performance in mathematics, and also taking into account issues such as personal background, maturity and whether they are receiving other interventions. The Numbers Count intervention then takes place over one school term (typically 12 weeks) with four pupils receiving one-to-one<sup>1</sup> teaching for 30 minutes each school day (although at the discretion, pairs or groups of pupils may be taught, perhaps towards the end of the intervention process). In the first two weeks of the intervention, a baseline measurement of attainment (by the Numbers Count teacher using the Sandwell test) and attitude (using questions devised by Edge Hill University) are carried out with each pupil. Also, this is a period of initial diagnostic assessment where the pupils' strengths and weaknesses in number can be identified through activities in the Numbers Count lessons. Following this, the one-to-one teaching of the pupil by the teacher takes place until the end of term, with ongoing diagnostic assessment taking place. At the end of the term, the pupils' attainment (this time by a link teacher, perhaps the Head Teacher or Maths Coordinator, using a different Sandwell test) and attitudes are reassessed, a final diagnostic assessment is carried out, and the pupils is prepared for exit from the intervention, including joint planning with the Class Teacher.

The structure of the Numbers Count Lesson, as set out in the lesson plans used by the Numbers Count Teachers, start off with a familiar activity, and then a counting activity, before moving on to two 'current activities' where the main teaching activities for the lesson will take place. There is then a 'further applications' activity containing real-life scenarios (although aspects of using and applying may be introduced in any part of the lesson). The lesson concludes with a reflection between teacher and pupil looking at the success criteria and next steps for the pupil. During the lesson, teachers are encouraged to use a variety of resources and activities with the pupil, including multiple representations (e.g. number lines, Numicon, cubes) and games. The teacher is constantly asking questions of the pupil and listening carefully to the pupil responses. As such, the Numbers Count Lessons take place in a specially designated area of the school with all these resources and examples of pupils' work. This might be a small classroom, a part of a classroom or even a designated area of one corridor.

### *Perceived benefits of the Numbers Count Lesson*

As perceived by the researchers, the benefits of the Numbers Count Lesson is specifically the one-to-one nature of the intervention, where teaching can be tailored for the needs of the pupils, and the teacher can change the lesson easily to follow up on issues that occur during the lesson, for example misconceptions that are identified. Plenty of opportunity is available for the teacher to question and to allow the pupil to explain their reasoning, thus gaining further insight into their understanding. These three benefits of 'Being able to focus on

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<sup>1</sup> Note that for the purposes of the evaluation trial, teachers were also asked to teach pupils in pairs and triplets. However, this was only for the evaluation, and Numbers Count is considered to be a one-one intervention.

specific mathematical difficulties of pupils', 'Being able to identify misconceptions and gaps in pupils' knowledge during the lessons' and 'The flexibility to change the lesson plan to tackle pupils' difficulties' were also identified as being the most important benefits of the lessons in the survey of Numbers Count Teachers.

#### *Support for Numbers Count Teachers*

Supporting Numbers Count Teachers in their work are Teacher Leaders for each area, and the National Trainers covering the North, East and West of England. In addition to support visits from Teacher Leaders and also visits between Numbers Count Teachers, teachers attend a series of one-day training sessions run by the Teacher Leaders in each area. There are 10 regional training days in the first year of Numbers Count training for teachers, and 6 days in the second year. From the perception of the researcher, these provide a valuable opportunity for teachers to share good practice and also to share concerns and ask for advice. This 'Opportunities to discuss practice with colleagues' was also identified in the survey of Numbers Count Teachers as being the most valuable part of the training

#### *Perceived areas of development for Numbers Count*

In line with the perceived benefits of the Numbers Count lessons and the support for teachers highlighted above, the perception of the researcher was that the structure of the lessons and the training could be modified to support these benefits. For example, in the case of the lessons, from observations and teacher comments, it may be appropriate to reduce the number of 'current learning activities' from two to one, to allow for more time for teacher questioning and pupil thinking and explanation. Also, sometimes, the 'further applications' and the reflection activities of the lesson were not covered due to lack of time in the lesson. From the survey of Numbers Count Teachers, teachers were least confident in 'Incorporating using and applying tasks in each lesson', 'Assessing and diagnosing understanding in each lesson', 'Providing opportunities for explanation and reasoning in each lesson' and 'Overall reflection on learning and identification of next steps in each lesson'. Once again, freeing up time within the lesson may help with these concerns. With regards to the Numbers Count Training for teachers, from the perception of the researcher, the most effective sessions were where ample opportunity for discussion between teachers was provided. Once again, modifying the structure or emphasis of the training sessions so that this is the main focus may be desirable.

### Appendix 3: Summary of Process Evaluation Instruments

|    | <b>INSTRUMENT SUMMARY</b>  | <b>Developed by</b> | <b>Status</b> |
|----|--|---------------------|---------------|
|    | <b>School Visits (1<sup>st</sup>)</b>  |                     |               |
| 1  | Interview with Numbers Count teacher prior to lesson observation                     | PB                  | Done          |
| 2  | Lesson observations with the Numbers Count teacher and pupils                        | PB                  | Done          |
| 3  | Interview with Numbers Count teacher after lesson observation.                       | PB                  | Done          |
| 4  | Interviews with pupils following observation   | PB                  |               |
| 5  | Interview with headteachers  | AW                  | Done          |
| 6  | Parent / carer interviews  | AW                  | Done          |
| 7  | Parent / carer survey  | AW/PB               | Withdrawn     |
|    | <b>Schools Visits (2<sup>nd</sup>)</b>   |                     |               |
| 8  | Interview with Y <sup>7</sup> teacher and Numbers Count teacher prior to observation | PB                  | Done          |
| 9  | Whole class observation  | PB                  | Done          |
| 10 | Interviews with pupils after lesson observation                                      | PB                  | Done          |
| 11 | Interview with Y2 class teacher  | PB                  | Done          |
| 12 | Interview with Y2 teaching assistants  | PB                  | Done          |
|    | <b>Professional development sessions</b>   |                     |               |
| 13 | Observation at regional Profession Development sessions                              | PB                  | Done          |
| 14 | Group interviews at regional Profession Development sessions                         | PB                  | Done          |
| 15 | Interview with Teacher Leader running regional Profession Development sessions       | PB                  | Done          |
| 16 | Observation at national Profession Development sessions for Teacher Leaders          | PB                  | Done          |
| 17 | Group interviews with Teacher Leaders at national Professional Development sessions  | PB                  | Done          |
| 18 | Interview with National Trainers at national Professional Development sessions       | PB                  | Done          |
| 19 | Online survey of Numbers Count teachers  | PB                  | Done          |
| 20 | End of Year Online survey of Numbers Count teachers                                  | PB                  | Done          |
|    | <b>Local authorities</b>   |                     |               |
| 21 | Local authority officer interviews   | AW                  | Done          |
| 22 | Interviews with non-opt in schools   | AW                  | Done          |
|    | <b>National Infrastructure</b>   |                     |               |

## **Instrument 1. Interview with Numbers Count teacher prior to the lesson observation**

18 schools will be visited in order to observe the Numbers Count lessons in schools. Prior to the observation of the daily 30-minute lessons with the pupils, specific background information will be obtained from the Numbers Count Teacher. This will include the stage that the school and the Numbers Count teacher is at, for example, how many cohorts of children have already been through the Numbers Count intervention, and which cohort of trainees the Numbers Count teacher is from. This will be to take into account some of the variations between schools over the three different terms when school visits will take place. This interview will be recorded so that the researcher can place the lesson observations in a more complete context.

1. How many cohorts of pupils have previously experienced the Numbers Count interventions?
2. What criteria were used to select the pupils for Numbers Count?
3. For those children currently chosen for the intervention, what did the results of the baseline measure of the pupils' attainment and attitude reveal (request for documentation)?
4. What did the classroom observations of the children reveal (request for documentation)?
5. What did the Numbers Count diagnostic assessment for the pupils reveal (request for documentation)?
6. If appropriate, with reference to your records for the children, how have the children progressed in the four strands of mathematics and in terms of their attitude and confidence?
7. With reference to your plans for the pupils concerned and your lesson plans, what are the learning objectives for the lessons?
8. What home activities are planned for the children and parents to complete together?
9. Are there any specific issues that the Numbers Count Teacher feels that the researcher should look out for in the observations?

## **Instrument 2. Lesson observations with the Numbers Count Teacher and pupils**

The observations of lessons with the Numbers Count Teacher and pupils will be carried out in a participant observation, specifically, with the 'observer-as-participant' where the pupil and teacher are aware of the researcher, but with the intention that there will not be extensive involvement of the researcher in the lesson. The data collected during the observation will be field notes, designed to provide an account of what happens during the lesson. The taking of the field notes will be structured in order to enable a focus on the key expected features of a Numbers Count lesson as highlighted in the Numbers Count handbook, as well as being a record of the lesson. Therefore, the field notes will be recorded on the following pro-forma. The record of the lesson is structured in the same manner as the Numbers Count Lesson plan so that the structure of the lesson can be followed more easily. It is anticipated that at least two observations of lessons will be carried out during any one visit.

Following each observation, the researcher will discuss with the Numbers Count Teacher the teacher's views of the lesson, e.g. whether they felt the lesson went well and why, so that the teacher's views can be incorporated and used to inform the researchers' observations.

Observation Record of the Numbers Count lesson

**Date:**

**School:**

**Numbers Count Teacher:**

**Pupil:**

| <b>Time of start of activity</b> | <b>Learning Focus</b>                    | <b>Learning Episodes</b> | <b>Reflection of observer and teacher</b> |
|----------------------------------|--|--------------------------|---|
|                                  | <b>Familiar Activity</b>                 |                          |   |
|                                  | <b>Counting activities</b>               |                          |   |
|                                  | <b>Current Learning Activity 1</b>       | <b>Objective:</b>        |   |
|                                  | <b>Current Learning Activity 2</b>       | <b>Objective:</b>        |   |
|                                  | <b>Further Application Opportunities</b> |                          |   |
|                                  | <b>Reflection</b>                        |                          |   |
| <b>Further notes</b>             |  |                          |   |

Observation on the key features of the Numbers Count lesson

| Features                                  | Observations | Reflection of observer and teacher |
|---|--------------|------------------------------------|
| Focus of the lesson                       |              |                                    |
| Lesson environment                        |              |                                    |
| Structure                                 |              |                                    |
| Progression                               |              |                                    |
| Balance of activities                     |              |                                    |
| Resources                                 |              |                                    |
| Contextualisation                         |              |                                    |
| Pupil involvement                         |              |                                    |
| Pupil enjoyment                           |              |                                    |
| Pupil success/ impact on pupil            |              |                                    |
| Interaction including praise and feedback |              |                                    |
| Overall atmosphere of the lesson          |              |                                    |



### **Instrument 3. Interviews with Numbers Count Teacher after lesson observation**

A separate interview will be carried out with the Numbers Count Teachers in order to gain their views of being part of Every Child Counts. Background information on which cohort of trainees the Numbers Count teacher is from will also be obtained, to take into account some of the variations between schools over the three different terms when school visits will take place. The interviews will be semi-structured and will examine the following issues:

- What has been the teacher's experience so far of providing this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Do the children seem to be making progress as a result of the intensive support?
- What do the schools do to maintain any gains in children's progress?
- What is the teacher's opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?
- What do you think about the intervention being used with small groups of pupils rather than individuals?
- What professional development are you having as a Numbers Count teacher?
- Which cohort of Numbers Count teacher training were you from?
- Do you feel that the professional development provided to you prepared you adequately as a Numbers Count Teacher?
- What aspects of the professional development have you found most useful so far? For example, the MA (where applicable), face to face training, visits to colleagues, Teacher Leader visits.
- Are there particular areas in which you would like further support?
- Have you had enough opportunities to liaise with colleagues in the school and with parents about what you are doing with Numbers Count? What successes have you had and what barriers have you faced?
- Has Numbers Count had any wider benefits for colleagues or parents?
- What support have you had from other members of the school community, e.g. Head Teacher, classroom teacher? Would you like any further support?
- What support have you had from parents? Would you like any further support?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

## **Instrument 4. Interview with pupils following the lesson observations**

Following the Numbers Count lessons observations, pupils involved in Numbers Count will be interviewed, ideally as one group of four children. The interview will be audio-recorded with the permission of the Y2 teacher and the pupils themselves. The interviews will be semi-structured, with the interview organised around the following questions:

- What kind of things do you do in the lessons with Mr/Mrs .... (Numbers Count Lessons)?
- How is this different to your lessons with the rest of the class?
- How do you feel about having these lessons with Mr/Mrs ....?
- What are the best things about these lessons?
- What things do you not like about these lessons?
- What do you learn in these lessons?
- What maths can you do now that you could not do before?
- Has the way you feel about maths changed because of these lessons? If so, how?
- Do you think it is a good idea to have these lessons? Could they be made any better?
- Is there anything else you would like to say about these lessons?

The aim of these interview questions is to try and ascertain their present views on being involved in Numbers Count Lessons.

The interview with the pupils will be transcribed from the recording. This transcription will then be used in the analysis of pupil interviews.

## **Instrument 5. Interviews with headteachers**

*Assume with head or other senior staff but preferably not the link teacher.*

The themes and questions below have been primarily derived from the research specification and communications to schools from ECC, including the Numbers Count Standards and Requirements 2008-2009. These have been divided in to sections (underlined) and some are in the form of direct questions where as others seek the respondents views / invite comments in a more neutral way.

### **Key Evaluation Criteria:**

The criteria below will be primarily used to guide the evaluation the issues surrounding the impact and organisation of ECC at the school level.

- The school's context and heads knowledge of ECC
- Views on their NC teacher including training and preparation
- Recruitment and support
- Organisational (school level) issues
- Resourcing issues
- Wider staff involvement
- Perceived programme impacts (including beyond individual child's maths)
- Key challenges
- Future developments of model

### **1 Introduction (with interviewee)**

- With reference to the schools letter briefly outline and discuss key and overarching aims of research.
- Clarify interviewee's knowledge of ECC / NC – provide further explanation as required.
- Emphasise programme is at a developmental stage and their views are important
- Emphasise semi- structured and open ended exploratory / discursive nature questions.
- Confirm anonymity of responses, seek permission to record.

### **2 Context / Background**

*Aim – understand the context within which the school operates, including any specific issues regarding mathematics teaching.*

#### **Questions / Discussion / Prompts:**

- Agree a thumbnail sketch of school and context (pre read Ofsted report)
- Confirm numbers of pupils receiving NC
- Seek an overall 'set the scene' snapshot view of the programme
- Identify any other specific initiatives school is involved in (including ECAR and KS2 one to one – briefly compare the two systems, and any interactions between them)

### **3 Numbers Count Teachers**

*Aim – understand and build a picture of the issues surrounding the recruitment and professional development of NC teachers. Identify and if necessary explore any issues with regard ‘duality’ of employment and control.*

#### **Questions / Discussion / Prompts:**

- Clarify recruitment procedures, availability of suitable NC teachers
- The background and role of NC teachers outside of NC lessons
- Views on general approach and preparedness of the NC teacher for the task
- Views on how well they appear to have been trained
- How and by whom is the NC teacher managed and supported on a day to day basis
- Views on the quality of on-going support they receive, including from the local authority, the school and from their TL
- Have there been any significant issues in terms of control and direction of NC teachers (including who and how managed)?
- Look for and discuss examples of NC teacher providing wider school benefits (formal and informal) and how the school can promote this

#### **4 Support and Links**

*Aim – understand how well schools feel they have been made aware of the commitments, the support they receive and how they link with other organisations.*

#### **Questions / Discussion / Prompts:**

- Why / how did your school come to be involved in ECC – (ie. how made aware)?
- Views on the initial understanding of requirements / commitment by the school
- Has this proved realistic? (seek reasons where not)
- Views on the ‘Contract’ and Standards and Requirements documents (if appropriate ways in which could be improved / enhanced)
- Views on the Teacher Leader role
- Details and views on termly heads network meetings

#### **5 School level Organisation**

*Aim – build an understanding of the organisational impacts and issues for schools who adopt ECC*

#### **Questions / Discussion / Prompts:**

- Outline the selection process you use. Are you happy with the general guidance for this in the handbook,
- With hindsight have any children been missed that should have been selected?
- Are you aware of any issues regarding collecting and submitting NC data?
- How do you use the performance data you receive back (above and LA)?
- Could this be improved in any ways?
- What has been the reaction of parents of NC children to the programme?
- Do staff and children view NC as a normal part of school life?
- Outline any ways in which NC children are supported once having completed the programme?

- Outline action taken for any children who have completed ECC but have not progressed as much as expected
- Outline any ways in which the school uses the NC teacher to promote wider benefits from ECC
- Does ECC overlap with any other initiatives such as ECAR or one-to-one KS2 tuition? And what are the implications?

## **6 Resourcing**

*Aim – understand better the requirements on schools including any hidden costs*

### **Questions / Discussion / Prompts:**

- Have there been any problems providing a suitable learning area?
- Are there any other indirect or unanticipated costs or resources associated with supporting ECC?
- Are there ways in which NC resources have been used elsewhere in the school / teaching process?
- Have there been any issues regarding funding the school's contribution?
- Do you anticipate that this will be sustainable?

## **7 Staff Commitment / support**

*Aim – the model requires an integrated and supported approach with a number of staff being involved, this sections seeks to understand the implications for schools*

### **Questions / Discussion / Prompts:**

- How much support do you / other senior colleagues / other staff give for the operation of the programme?
- Do other teaching and support staff have a good knowledge of the NC programme?
- Have other staff observed / supported NC sessions?
- Other ways in which head / others support the NC teacher to enhance the programme
- How is the process of deciding which KS1 children need which interventions/monitoring their progress/evaluating the impact of different interventions managed in school – who is involved and how?

## **8 Perceived Impacts**

*Aim – gain the heads perspective of the impact of the programme both for individual children, and the school more generally*

### **Questions / Discussion / Prompts:**

- In general how have the children taking part found the experience?
- Discuss positive experiences in general terms, and please give some specific examples
- Discuss negative experiences in general terms, and please give some specific examples
- Discuss positive wider impacts due to ECC
- Discuss negative wider impacts due to ECC

## **9 Challenges**

*Aim – develop an understanding of the most significant challenges schools have faced, and the strategies they applied to overcome them*

### **Questions / Discussion / Prompts:**

Invite discussion on some of the key challenges the school has faced – consider:

- Root causes
- Are they specific (school level) or system (ECC)
- Do they interact / interfere with other initiatives and priorities (eg funding)
- Way forward

## **10 Future development**

*Aim – provide opportunity for interviewees to influence the development of the programme.*

### **Questions / Discussion / Prompts:**

- Views on what could be changed and why / how
- How would you feel about small groups rather than one to one
- Views on TA involvement (including wave 2)
- Do you envisage continuing with ECC? What factors would influence your decision?

## **Instrument 6. Parents / Carers interviews**

We will aim to carry these out in small group (ie. 2 or 3) settings at the individual schools, however, where this is not possible one to one telephone interviews will be used. We would anticipate and advise that the group interviews would take about 15mins and the telephone ones about 10mins. The same question format (with appropriate changes to wording / context) will be used both for the small group interviews and telephone interviews so as to aid like with like comparisons. The interviews will be on a semi-structured basis, so as to allow the inclusion of a wide range of responses and expertise amongst the parents / carers. We will seek permission to record the group interviews but not the telephone interviews.

### **Introduction and Aims of research**

- Confirm anonymity of responses (including to school)
- Explain this interview is related to the mathematics support programme – Number Count
- Clarify interviewee's knowledge of Numbers Count – provide further explanation as necessary
- Emphasise programme is at a developmental stage and their views are important
- Emphasise semi- structured and open ended exploratory / discursive nature of questions

### **Context**

(Seek clarification of any significant points as to whether before or during ECC)

- Does your child enjoy school generally?
- And how about other subjects besides maths?
- What are their greatest strengths at school?
- And is (was) there anything else besides maths that they find difficult (prompt for any other support programmes)
- What are the good points about ..... school?
- And is there anything you think the school is not so good at?

### **Experience of Maths before NC**

- Please say a bit about how your child has found maths since starting school
- Do you feel they had significant difficulties in maths?
- What has been the contact from the school about any difficulties with maths?
- Has any other support previously been provided or offered to your child in maths (prompt also school more generally)?

### **Experience of NC lessons**

- How did the school make their initial contact with regard Numbers Count?
- In general terms how do you feel the lessons have gone?
- What does your child tell you about the Numbers Count lessons?
- Have there been any specific problems with your child missing their normal lessons due to taking part in NC?
- Do you feel their interest and confidence in maths increased because of the NC lessons?
- What has been your impressions of the Numbers Count teacher?

- Has the school asked you to help in any ways with your child's NC work or lessons? (if so please discuss / give examples – prompts: how can / could the school make it easier for you to help; do did you feel, and how do you feel now about helping with their maths?)
- Have there been any other benefits or disadvantages from doing the Numbers Count lessons (prompt other subjects, school work and life more generally)
- Have you been happy with the feedback you have received from the school about Numbers Count?

### **Re-integration**

(Where applicable)

- How do you feel your child has fitted back in to their regular maths lessons?
- How do they find maths now?
- And school life more generally? (pick up issues of attitudes, confidence etc)
- Were you happy with the on-going and subsequent contact from the school?

### **Further thoughts**

- How would you feel about your child being offered similar support in a small (2 or 3) group rather than individually?
- Would you recommend Numbers Count to other families in similar positions?



## **Instrument 7. Parent / Carer Surveys**

Please see the pilot report – this survey has been abandoned.

## **Instrument 8. Interview with Y2 teacher and Numbers Count teacher prior to whole class observation**

9 schools will be visited to observe Y2 lessons following the reintegration of Numbers Count graduate pupils into their mainstream lessons.

These schools will be chosen randomly from the schools visited the first time around, with the aim of following up children that were observed in the Numbers Count lessons. It is therefore expected that the second visit will take place about 10 weeks after the initial visit. However, the timing of the visits will be agreed with schools in case children have had Numbers Count lessons for more than 12 weeks, and it is appropriate to delay the second visit to take this into account.

Prior to the observation of the Y2 lessons involving pupils who have graduated from Numbers Count, specific background information will be obtained from the Numbers Count Teacher and the Y2 teacher. This interview will be recorded so that the researcher can place the lesson observations in a more complete context.

1. What did the results of the baseline measure of the pupils' attainment and attitude reveal (request documentation)?
2. What did the results of the exit assessments of the pupils' attainment and attitude reveal (request documentation)?
3. What did the Numbers Count Exit record reveal?
4. Have there been any follow-up assessments?
5. In the view of the Y2 teacher, what has been the pupils' experience of mathematics lessons following Numbers Count, with respect to attainment and attitudes?
6. Are there any specific issues that the Y2 teacher feels that the researcher should look out for in the observations?

## **Instrument 9. Whole class observation**

The observations of lessons with the Y2 teacher and pupils will be carried out in a participant observation, specifically, with the 'observer-as-participant' where the pupils and teacher are aware of the researcher, but with the intention that there will not be extensive involvement of the researcher in the lesson. The researcher will concentrate on the four recent graduates from the Numbers Count Lessons. The data collected during the observation will be field notes, designed to provide an account of the involvement of the pupils concerned. The taking of the field notes will be structured in order to enable a focus specifically on the pupils' learning rather than the teaching. Therefore, the field notes will be recorded on the following pro-forma. The record of the lesson is structured in the same manner as the Classroom Observation Record in the Numbers Count handbook, so that comparisons can also be made more easily with how pupils cope in lessons before and after the Numbers Count lessons. It is anticipated that during any observation, more than one child may be being observed at a time (i.e. those that have recently experienced Numbers Count Lessons).

Following each observation, the researcher will discuss with the Year 2 teacher their views of the lesson, so that the teacher's views can be incorporated and used to inform the researchers' views.

Observation Record of the Y2 lesson

**Date:**

**School:**

**Y2 Teacher:**

**Pupils:**

| <b>Mathematics Lesson Phase and content</b>                               | <b>Observations</b> | <b>Reflection of observer and teacher</b> |
|---|---------------------|---|
| <b>Whole class teaching</b><br><br><b>Content:</b>                        |                     |   |
| <b>Adult-led small group teaching</b><br><br><b>Content:</b>              |                     |   |
| <b>Working with other children, without adults</b><br><br><b>Content:</b> |                     |   |
| <b>Working unaided alone</b><br><br><b>Content:</b>                       |                     |   |
| <b>Further comments</b>   |                     |   |

## **Instrument 10. Interview with pupils after lesson observations**

Following the Numbers Count lessons observations, pupils involved in Numbers Count will be interviewed, ideally as one group of four children, and with their Y2 teacher present. The interview will be audio-recorded with the permission of the Y2 teacher and the pupils themselves. The interviews will be semi-structured, with the interview organised around the following questions:

- Having finished the lessons with Mr/Mrs..., how did you feel about having these lessons with Mr/Mrs ....?
- Having had the lessons, what things can you do now that you couldn't do before in maths?
- Do you feel more confident in your maths lessons? Do you enjoy your maths lessons more? Why is that do you think?
- Do you think it is a good idea to have these lessons for pupils? Could they be made any better?
- Is there anything else you would like to say about these lessons?

The aim of this interview with the pupils will get them to reflect on the impact of the Numbers Count lessons, in particular the impact the lessons have on their current learning of mathematics.

The interview with the pupils will be transcribed from the recording. This transcription will then be used in the analysis of pupil interviews.

## **Instrument 11. Interviews with Y2 class teacher**

A separate interview will be carried out with the Y2 in order to gain their views of Every Child Counts. The interviews will be semi-structured and will examine the following issues:

- What has been the teacher's experience so far of this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Have the children generally made progress as a result of the intensive support?
- How are the children coping with their maths lessons following the intervention, both in terms of their enjoyment and attainment?
- Have the children made further progress/maintained their gains since they received Numbers Count support?
- Have there been any changes with respect to other subjects?
- Has the teacher had the opportunity to observe Numbers Count Lessons?
- What is the teacher's opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?
- What opportunities have there been for the Numbers Count Teacher to liaise with colleagues in the school and with parents about what they are doing with Numbers Count?
- Has Numbers Count had any wider benefits for yourself,
- What benefits has it had on colleagues?
- Have there been benefits from Numbers Count for parents?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

## **Instrument 12. Interviews with Y2 teaching assistants**

A separate interview will be carried out with the Y2 teaching assistants in order to gain their views of Every Child Counts. The interviews will be semi-structured and will examine the following issues:

- What has been their experience so far of this intensive support to pupils?
- What have been the particular mathematical difficulties experienced by the pupils?
- Have the children made progress as a result of the intensive support?
- How are the children coping with their maths lessons following the intervention, both in terms of their enjoyment and attainment?
- Have the teaching assistants had the opportunity to observe Numbers Count Lessons?
- What is their opinion of the particular intervention process used for Every Child Counts?
- What are the particularly positive characteristics of the intervention?
- What areas of the intervention could be developed further?
- Are there any wider benefits to the pupil receiving the intervention and for others in the class?
- Has Numbers Count had any wider benefits for yourselves or for other teaching assistants?
- Has Numbers Count had any benefits for parents?

Once again, with the permission of the interviewee, the interview will be recorded and the transcription used for analysis.

## **Instrument 13. Observations at regional Professional Development sessions**

Researchers will attend the face-to-face professional development sessions of Numbers Count Teachers in a number of Local Authorities. In total, 18 professional development sessions will be attended. The aims of observing these sessions are:

- Finding out how this aspect of the professional development is structured;
- Examining variation in professional development across different sessions;
- Providing formative feedback on what we find to be positive aspects of the professional development, and also what we feel could be improved.

Lying behind these particular aims is the overall aim of gathering background information on the professional development of Numbers Count Teachers, which in turn will inform the observation of Numbers Count Lessons elsewhere in the evaluation. As such, the outcomes of these observations will be a gathering of impressions by the researchers, rather than a comparison against specific aims, although some comparisons between professional development sessions will be made. Therefore, the observations will be carried out in an unstructured way, where field notes will be compiled from:

- Observations of the sessions;
- Comments from participants and trainers;
- Researcher impressions of the professional development activities.

The role of the researchers within these observations will be as an 'observer-participant' where participants in the professional development are aware of the researcher as an observer, and where participation in the professional development activities will be limited but not precluded.

As soon as possible following the observation of each professional development session, the field notes will be written up in the form of an observation report. Reports from different sessions will form the basis for analysing the professional development of Numbers Count Teachers overall and for making comparisons between professional development sessions.



## **Instrument 14. Group interviews at regional Professional Development sessions**

During the face-to-face professional development sessions, interviews with participating Numbers Count Teachers will be requested and carried out in 20 minute sessions arranged by the professional development providers. The interviews will be carried out with groups of Numbers Count teachers (ideally groups of three to make the interview manageable and to provide all interviewees the opportunity of putting across their views) in order to gain their impressions of the professional development. These will be carried out in such a way as to avoid as much as possible any disruption in the professional development activities (e.g. speaking with participants during breaks). It is anticipated that at least two groups of Numbers count teachers will be interviewed during a visit, and therefore, a minimum of 6 teachers will be interviewed during a visit. In addition, at the end of the training session, Teacher Leaders who have led the sessions will also be interviewed. With the permission of the interviewees, these interviews will be recorded and subsequently transcribed for analysis.

The interviews with Numbers Count Teachers will be semi-structured and will be based around the following questions:

- How did you come to be involved in Every Child Counts as a Numbers Count Teacher?
- How have you found the professional development so far, including the MA (where applicable), these training sessions, visits to colleagues and Teacher Leader visits?
- What are the particularly positive aspects of the professional development?
- What aspects of the professional development do you feel need developing still?
- How well do they feel prepared and how is the professional development helping them in the following areas:
  - Understanding of the early mathematics curriculum?
  - Understanding of how young children learn mathematics and barriers to learning?
  - The pedagogical skills required to enable young children with difficulties in mathematics to progress?
  - Making summative and diagnostic assessments of young children's mathematical development?
  - The subject knowledge and skills required in a 'whole-school' catalyst role (from September 2009 onwards)?
- Are there any other particular areas in which you would like further support?

## **Instrument 15. Interview with Teachers Leader running regional Professional sessions**

These will be semi-structured and will be based around the following questions:

- How have you found the provision professional development so far, including the MA (where applicable), these training sessions, visits to colleagues and Teacher Leader visits?
- What are the particularly positive aspects of the professional development?
- What aspects of the professional development do you feel need developing still?
- Are there any particular areas of providing professional development in which you would like further support?

## **Instrument 16. Observation at national Professional Development sessions for Teacher Leaders**

In visiting one of the national professional development days for Numbers Count Teacher Leaders, it is anticipated that the professional development day will contain the following:

- An opportunity to review progress and practice for Teacher Leaders, including
  - Discussion with colleagues with regards to practice;
  - Discussion as a whole group with regards to practice including sharing good practice and highlighting difficulties;
  - Feedback to National Trainers;
  - Feedback from National Trainers.

It is therefore proposed that open notes be taken during the observations of training sessions, which will be typed up to give an overview of the particular training session.

## **Instrument 17. Group interviews with Teacher Leaders at national Professional Development sessions**

During the professional development day, the researcher will request to talk with two groups of three Teacher Leaders during the lunch break, each interview lasting 20 minutes. This timing is based on the similar interviews carried out at Numbers Count Teachers' professional development days. Previously, it was felt that too many questions were being asked in the time period available, so we need to focus specifically on the professional development aspects of Every Child Counts for Teacher Leaders. The proposed questions are therefore:

- Could you reflect on all aspects of your own professional development including the MA and these professional development days?
- What are the particularly positive aspects of the professional development?
- What aspects of the professional development do you feel need developing still?
- How well do you feel prepared for your role as a Teacher Leader?
- Are there any other particular areas in which you would like further support?

## **Instrument 18. Interview with National Trainers at national Professional Development sessions**

At the end of the professional development day, the researcher will interview the National Trainers present. The aim of the interview is to specifically examine the views of National Trainers with regards to the provision of national professional development opportunities for Teacher Leaders. We propose similar questions to those asked at the Numbers Count Teachers' professional development days:

- How have you found the provision of professional development for Teacher Leaders so far, including support for the MA and these professional development days?
- What are the particularly positive aspects of the professional development for Teacher Leaders?
- What aspects of the professional development do you feel need developing still?
- Are there any particular areas of providing professional development in which you yourself would like further support?

## Instrument 19. Online survey of Numbers Count teachers

### Welcome

Welcome to the online survey of Numbers Count Teachers. This is part of the overall evaluation of the Every Child Counts initiative, commissioned by the DCSF and carried out by the University of York and Durham University. This survey aims to gain the views of Numbers Count teachers on their professional development, their roles as Numbers Count Teachers and their views on Numbers Count lessons.

The survey is completed anonymously, although some background questions about yourself will be asked. The survey can be saved part way through and takes around 20 minutes to complete.

Note that once you have clicked on the CONTINUE button at the bottom of each page you cannot return to review or amend that page.

### Background of Numbers Count Teachers

Please provide the following details about yourself:

1. Which Local Authority are you in (please choose from the drop-down list). If your authority is not in the list, please choose the authority with which you have taken part in the Numbers Count training, or specify your authority using the 'Other...' option.

Select an answer Birmingham Bradford Bristol Cumbria Devon Doncaster Dudley Essex Hackney Kent Lancashire Leeds Manchester Middlesbrough Newham Norfolk Somerset Southend Southwark Sunderland Walsall Other...

If you selected Other, please specify:

2. Please specify your gender

Female Male

3. Please specify the number of years of teaching experience that you had when you became a Numbers Count Teacher

Select an answer 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 More than 30

4. Please give your highest educational qualification (choose from one of the options below):

PGCE

Masters level

Bachelors Level

Teaching Diploma/Teaching Certificate

Other (please specify):

5. What was your role just before you trained as a Numbers Count Teacher? Please specify (e.g. class teacher, headteacher, deputy or assistant headteacher, supply teacher, not working)

6. Without the opportunity to train as a Numbers Count teacher, would you have left the teaching profession?

No Yes

7. Assuming that funding for Every Child Counts continues, how long would you plan to remain in your current Numbers Count teacher role? (in years)

8. Apart from your Numbers Count Teacher role, what other role (if any) do you currently have in school?

9. Are you a trained Reading Recovery teacher?

No Yes

10. Are you or have you ever been an AST or local authority leading teacher?

No Yes

If 'Yes', please specify

11. Are you considering taking on the Williams Review maths specialist role?

No Yes Not offered the opportunity

12. Do you work as a NCT across more than one school?

No Yes

If 'Yes', how many schools, and how much time do you spend in each (e.g. 0.25 FTE, 0.3 FTE, 0.5 FTE)?

13. Are you employed centrally by the local authority rather than by a school?

No Yes

If 'Yes', do you focus on a specific group of pupils (eg Looked After Children, Traveller children, supporting small schools with low numbers of children requiring Numbers Count... Please specify)

### **Teachers' views on their professional development**

Thinking about the face-to-face professional development sessions that you have attended so far as a Numbers Count Teacher, please rate the value of the following aspects:

14. Opportunities to discuss practice with colleagues:

Not at all valuable Quite valuable Very Valuable No opportunity yet

15. Examining each others' practice through video:

Not at all valuable Quite valuable Very Valuable No opportunity yet

16. Providing feedback to National Trainers and Teacher Leaders:

Not at all valuable Quite valuable Very Valuable No opportunity yet

17. Receiving general feedback from National Trainers and Teacher Leaders:

Not at all valuable Quite valuable Very Valuable No opportunity yet

18. Focussing on teachers' understanding of the early mathematics curriculum:

Not at all valuable Quite valuable Very Valuable No opportunity yet

19. Focussing on aspects of pedagogy for teaching early mathematics

Not at all valuable Quite valuable Very Valuable No opportunity yet

20. Focussing on your wider role in school, using your Numbers Count skills to help raise standards generally:

Not at all valuable Quite valuable Very Valuable No opportunity yet

21. What has been the most valuable face-to-face professional development opportunity for you personally? (open response)

22. Are there particularly positive characteristics of the face-to-face professional development sessions that you would like to highlight? (open response) (Optional)

23. What aspects of these sessions could be developed further? (open response)

### **Teachers' views on their professional development (continued)**

Thinking about other professional development opportunities that you have experienced so far as a Numbers Count Teacher, please rate the value of the following:

24. Visits to and from other Numbers Count teachers:  
Not at all valuable   Quite valuable   Very Valuable   No opportunity yet

25. Support and visits from Teacher Leaders:  
Not at all valuable   Quite valuable   Very Valuable   No opportunity yet

26. The additional opportunity of doing the MA qualification (if applicable):  
Not at all valuable   Quite valuable   Very Valuable   Not applicable

27. Are there particularly positive characteristics of these other professional development opportunities that you would like to highlight? (open response) (Optional)

28. What aspects of these other professional development opportunities could be developed further? (open response)

### **Teachers' views on their roles as Numbers Count Teachers**

We would like to identify some of your roles as a Numbers Count Teacher and the degree to which you feel prepared for these roles.

Please rate the following aspects of delivering a Numbers Count lesson in terms of how confident you feel in each role:

29. Planning precise objectives for each lesson;  
Not at all confident   Quite confident   Very confident

30. Recording learning outcomes for each lesson;  
Not at all confident   Quite confident   Very confident

31. Focussing on specific mathematical difficulties in each lesson;  
Not at all confident   Quite confident   Very confident

32. Building on existing knowledge of children and consolidation of earlier learning in each lesson;  
Not at all confident   Quite confident   Very confident

33. Practice of fact retrieval and counting activities in each lesson;  
Not at all confident   Quite confident   Very confident



34. Incorporating using and applying tasks in each lesson;  
Not at all confident Quite confident Very confident
35. Overall reflection on learning and identification of next steps in each lesson;  
Not at all confident Quite confident Very confident
36. Assessing and diagnosing understanding in each lesson;  
Not at all confident Quite confident Very confident
37. Use of concrete and visual materials in each lesson;  
Not at all confident Quite confident Very confident
38. Engaging children in practical activities in each lesson;  
Not at all confident Quite confident Very confident
39. Providing opportunities for explanation and reasoning in each lesson;  
Not at all confident Quite confident Very confident
40. Developing correct mathematical language in each lesson;  
Not at all confident Quite confident Very confident

**Teachers' views on their roles as Numbers Count Teachers (continued)**

Please rate these further aspects of your role as a Numbers Count Teacher in terms of how confident you feel in each role:

41. Setting up and maintaining an appropriately resourced teaching area;  
Not at all confident Quite confident Very confident
42. Selecting children for Numbers Count intervention;  
Not at all confident Quite confident Very confident
43. Setting up a timetable for Numbers Count lessons;  
Not at all confident Quite confident Very confident
44. Implementing baseline and diagnostic assessments;  
Not at all confident Quite confident Very confident
45. Making and recording exit assessments for each child;  
Not at all confident Quite confident Very confident
46. Collecting data for the implementation, recording and evaluation of the Numbers Count intervention;  
Not at all confident Quite confident Very confident
47. Liaising with other staff in school about Numbers Count;  
Not at all confident Quite confident Very confident
48. Liaising with parents of Numbers Count pupils;  
Not at all confident Quite confident Very confident
49. To what degree do you feel that you have received support from your school's senior management team in your role as a Numbers Count teacher?  
Little or no support Some support but would like more Very good support

## Teachers' views on Numbers Count Lessons

Given below are some of the possible characteristics of the Numbers Count lessons that could benefit children's learning of mathematics. Please rate how valuable you think each characteristic is in terms of children's learning:

50. Planning lessons for individual pupils;  
Not at all valuable   Quite valuable   Very valuable
51. Being able to focus on specific mathematical difficulties of pupils;  
Not at all valuable   Quite valuable   Very valuable
52. Practicing number facts during the lessons;  
Not at all valuable   Quite valuable   Very valuable
53. Use of concrete and visual materials during lessons;  
Not at all valuable   Quite valuable   Very valuable
54. Being able to identify misconceptions and gaps in pupils' knowledge during the lessons;  
Not at all valuable   Quite valuable   Very valuable
55. The flexibility to change the lesson plan to tackle pupils' difficulties;  
Not at all valuable   Quite valuable   Very valuable
56. Being able to provide support with mathematical language;  
Not at all valuable   Quite valuable   Very valuable
57. Being able to build on the existing knowledge of pupils;  
Not at all valuable   Quite valuable   Very valuable
58. Providing opportunities for reasoning and explanation from pupils;  
Not at all valuable   Quite valuable   Very valuable
59. Engaging pupils in practical activities during lessons;  
Not at all valuable   Quite valuable   Very valuable
60. Incorporating using and applying in the lessons;  
Not at all valuable   Quite valuable   Very valuable
61. Updating lesson plans in light of reflection at the end of lessons;  
Not at all valuable   Quite valuable   Very valuable
62. What for you are the particularly positive characteristics of the Numbers Count lessons for children? (open response)
63. What areas of the lessons could be developed further? (open response)
64. Are there any wider benefits to the pupil participating in the Numbers Count lessons? (e.g. in the classroom, in other lessons, at home) (open response)

## Teachers' views on liaising with colleagues and parents/carers

Finally, please answer the questions below regarding opportunities to liaise with colleagues and parents/carers as part of your role as a Numbers Count teacher

65. How often have you had formal opportunities (e.g. weekly planning meetings) to liaise with colleagues in school about Numbers Count?

Never A few times Many times

66. How often have you had opportunity to liaise with parents/carers of pupils about what they are doing in the Numbers Count lessons?

Never A few times Many times

67. What actions have you taken in order to contact parents/carers? (open response)

68. How often have parents/carers of pupils watched what you are doing in the Numbers Count lessons?

Not many (less than a quarter) A few (more than a quarter) Some (more than half) Most (more than three quarters)

69. How many parents/carers do you think support their children with the activities that you send home from the Numbers Count lessons?

None A few parents Most parents All parents

70. Do you have any comments about liaising with colleagues or parents/carers? (open response) (Optional)

### **Thank you**

Thank you very much for completing this survey. We realise that your time is valuable, and we are very grateful to you for providing this information for the evaluation. There will be a follow-up survey in the middle of next year, and we hope you can also provide us with your views then. Many thanks again for your time.

## **Instrument 20. End of Year Online Survey of Numbers Count teachers**

### **Welcome**

Welcome to the end of year online survey of Numbers Count Teachers. This is part of the overall evaluation of the Every Child Counts initiative, commissioned by the Department for Education and carried out by the University of York and Durham University. Teachers were kind enough to complete an earlier online survey six months ago, where the response was excellent, and which provided invaluable information and guidance for the evaluation. This survey aims to focus in on some of the important issues raised in the previous survey, including Numbers Count professional development, your roles as Numbers Count Teachers and views on Numbers Count Lessons. It is hoped that the views that you give in this survey will inform the specific recommendations in the final evaluation report that we present to the Department for Education.

The survey is completed anonymously, although some background questions about yourself will be asked. The survey can be saved part way through and takes around 10 minutes to complete.

Note that once you have clicked on the CONTINUE button at the bottom of each page you cannot return to review or amend that page.

### **Background of Numbers Count Teachers**

Please provide the following details about yourself:

1. Which cohort of Numbers Count Teachers are you part of?  
Year 1 (starting in September 2009)  
Year 2 (starting in September 2010)  
Other (please give details)

2. Do you have another role within the school(s) where you are a Numbers Count Teacher?  
No    Yes

If yes, please give details

### **Teachers' views on their professional development**

Thinking about the face-to-face professional development sessions that you have attended so far as a Numbers Count Teacher, please rate the value of the following aspects:

3. Opportunities to discuss practice with colleagues:  
Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

4. Examining each others' practice through video:  
Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

5. Providing feedback to National Trainers and Teacher Leaders:  
Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

6. Receiving general feedback from National Trainers and Teacher Leaders:  
Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

7. Focussing on teachers' understanding of the early mathematics curriculum:

Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

8. Focussing on aspects of pedagogy for teaching early mathematics

Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

9. Focussing on your wider role in school, using your Numbers Count skills to help raise standards generally:

Not at all valuable    Quite valuable    Very Valuable    No opportunity yet

We would like to focus further on three aspects – opportunities for discussion, use of video, and input on the theory of learning mathematics. Please give your level of agreement on the following statements:

10. I feel that in all parts of the training (including REDS and other sessions), sufficient opportunities are provided for discussion with colleagues.

Do not agree                  Neither agree nor disagree                  I agree

11. Those leading the professional development sessions could provide more opportunities for discussion with colleagues.

Do not agree                  Neither agree nor disagree                  I agree

12. The use of my own and colleagues' video clips is a good way of sharing ideas.

Do not agree                  Neither agree nor disagree                  I agree

13. I feel that the need to bring video clips to training sessions needs to be reduced.

Do not agree                  Neither agree nor disagree                  I agree

14. The use of my own and colleagues' video clips is a good way of encouraging reflection on my practice.

Do not agree  
Neither agree nor disagree  
I agree

15. I feel that the use of video is more useful when focussing on specific issues of my own and discussing these with colleagues.

Do not agree                  Neither agree nor disagree                  I agree

16. The theory that is presented to us in training does inform our practice as Numbers Count Teachers.

Do not agree                  Neither agree nor disagree                  I agree

17. I feel that less theory should be presented to us when we start our Numbers Count training.

Do not agree                  Neither agree nor disagree                  I agree

18. The theory that is presented to us in training helps us to reflect on our practice.

Do not agree                  Neither agree nor disagree                  I agree

19. I feel that more detailed theory could be presented to us in our Numbers Count training.

Do not agree                  Neither agree nor disagree                  I agree

Teachers' views on their professional development (continued)

Thinking about other professional development opportunities that you have experienced so far as a Numbers Count Teacher, please rate the value of the following:

20. Visits to and from other Numbers Count teachers:

Not at all valuable   Quite valuable   Very Valuable

21. Support and visits from Teacher Leaders:

Not at all valuable   Quite valuable   Very Valuable

22. Network meetings with local Numbers Count Teachers:

Not at all valuable   Quite valuable   Very Valuable   Not applicable

23. The additional opportunity of doing the MA qualification (if applicable):

Not at all valuable   Quite valuable   Very Valuable   Not applicable

### **Teachers' views on their roles as Numbers Count Teachers**

Please rate the following aspects of delivering a Numbers Count lesson in terms of how confident you feel in each role:

24. Planning precise objectives for each lesson;

Not at all confident   Quite confident   Very confident

25. Recording learning outcomes for each lesson;

Not at all confident   Quite confident   Very confident

26. Focussing on specific mathematical difficulties in each lesson;

Not at all confident   Quite confident   Very confident

27. Building on existing knowledge of children and consolidation of earlier learning in each lesson;

Not at all confident   Quite confident   Very confident

28. Practice of fact retrieval and counting activities in each lesson;

Not at all confident   Quite confident   Very confident

29. Incorporating using and applying tasks in each lesson;

Not at all confident   Quite confident   Very confident

30. Overall reflection on learning and identification of next steps in each lesson;

Not at all confident   Quite confident   Very confident

31. Assessing and diagnosing understanding in each lesson;

Not at all confident   Quite confident   Very confident

32. Use of concrete and visual materials in each lesson;

Not at all confident   Quite confident   Very confident

33. Engaging children in practical activities in each lesson;

Not at all confident   Quite confident   Very confident

34. Providing opportunities for explanation and reasoning in each lesson;

Not at all confident   Quite confident   Very confident

35. Developing correct mathematical language in each lesson;  
Not at all confident    Quite confident    Very confident

36. Implementing baseline and diagnostic assessments;  
Not at all confident    Quite confident    Very confident

37. Making and recording exit assessments for each child;  
Not at all confident    Quite confident    Very confident

38. Collecting data for the implementation, recording and evaluation of the Numbers Count intervention;  
Not at all confident    Quite confident    Very confident

39. Liaising with other staff in school about Numbers Count;  
Not at all confident    Quite confident    Very confident

40. Liaising with parents of Numbers Count pupils;  
Not at all confident    Quite confident    Very confident

### **Teachers' views on Numbers Count Lessons**

Given below are some possible suggestions for changes to the Numbers Count lessons. Please give your level of agreement on the following statements:

41. Overall, the structure of the Numbers Count Lesson is fine as it is and no changes should be made.

Do not agree                  Neither agree nor disagree                  I agree

42. The second current learning activity part of the lesson should be removed to allow more time for other activities.

Do not agree                  Neither agree nor disagree                  I agree

43. The further applications part of the lesson should be removed, with using and applying incorporated throughout the other parts of the lesson.

Do not agree                  Neither agree nor disagree                  I agree

44. The reflection part of the lesson should be removed.

Do not agree                  Neither agree nor disagree                  I agree

45. We should teach more lessons in pairs or small groups of pupils, where we have the flexibility to choose when and with which pupils we can work with in this way.

Do not agree                  Neither agree nor disagree                  I agree

### **Teachers' views on maintaining the gains of pupils after Numbers Count**

Finally, please rate the following suggestions regarding how the gains in pupils' learning that are made during the Numbers Count intervention can be maintained after the intervention:

46. More opportunities to work in pairs/small groups during Numbers Count lessons.

Not at all valuable  
Quite valuable  
Very Valuable

47. More flexibility to work with pupils in class instead of Numbers Count lessons.

Not at all valuable   Quite valuable   Very Valuable

48. More opportunities to liaise with the Year 2 teacher.

Not at all valuable   Quite valuable   Very Valuable

49. More opportunities to liaise with the Teaching Assistants.

Not at all valuable   Quite valuable   Very Valuable

50. More opportunities to liaise with the Key Stage 2 teachers.

Not at all valuable   Quite valuable   Very Valuable

51. More opportunities to liaise with Senior Management in the school.

Not at all valuable   Quite valuable   Very Valuable

52. More information and training for the Year 2 teacher.

Not at all valuable   Quite valuable   Very Valuable

53. More information and training for the Teaching Assistants.

Not at all valuable   Quite valuable   Very Valuable

54. More information and training for the Key Stage 2 teachers.

Not at all valuable   Quite valuable   Very Valuable

55. More information and training for the Senior Management in the school.

Not at all valuable   Quite valuable   Very Valuable

### **Thank you**

Thank you very much for completing this survey. We realise that your time is valuable, and we are very grateful to you for providing this information for the evaluation. Also, thank you to all Numbers Count Teachers for all the help that you have provided throughout the evaluation.

[www.survey.bris.ac.uk/durham/numberscount2](http://www.survey.bris.ac.uk/durham/numberscount2)



## **Instrument 21. Local Authority officer Interviews**

*Assume group of LA officers with particular interest in ECC and related issues.*

### **1 Introduction to the research**

#### **Outline points:**

- Make reference to the invitation letter, briefly outline and discuss key and overarching aims of research.
- Emphasise programme is at a developmental stage and views will be feedback and taken in to account.
- Emphasise semi- structured and open ended exploratory / discursive nature of questions.
- Confirm anonymity of responses, seek permission to record.

### **2 Knowledge and awareness**

*Aim – build a picture of how aware and the depth of knowledge both those officers taking part in the session, others in the LA and relevant local stakeholders are of ECC and NC. There will be significant variation, and where appropriate provide the necessary outline detail to take the interviews forward effectively.*

#### **Questions / Discussion / Prompts:**

- Clarify interviewee's knowledge of ECC / NC
- Why did LA decide to participate
- Ascertain knowledge and awareness of ECC by other LA and associated staff / stakeholders
- Explore Head teacher communication systems and the perception of their knowledge and broad views

### **3 Alignment with existing plans and structure**

*Aim – explore the fit of ECC with other initiatives and broader plans, and where appropriate look for synergy and overlap / duplication*

#### **Questions / Discussion / Prompts:**

- Alignment with existing primary strategy plans and initiatives
- Were other intervention schemes being used previously
- Position of ECC in school improvement children services planning
- Relationship to other similar interventions including ECaR and ECaW
- Allocation and targeting of funding

### **4 LA level operational issues**

*Aim – build a picture of the key operational issues, and in particular identify significant actual, and potential, constraints.*

### **Questions / Discussion / Prompts:**

- Monitoring and evaluation systems, including self evaluation of ECC
- Recruiting and supporting schools
- Consortium working (where applicable)
- Management and support of TLs
- Supporting NC teacher to provide support to their schools for a 'layered model of intervention' (not in place until Jan 2010)
- Ongoing professional development of NC teachers

### **5 Impact and effectiveness**

*Aim – provide an assessment of the LAs views on the impact of the programme / intervention, and where appropriate make reference to specific hard evidence (beyond, and / or complementary to that already collected through ECC infrastructure).*

### **Questions / Discussion / Prompts:**

- Overall views on ECC programme and NC intervention
- Clarify costs – does it provide value for money, and what of opportunity costs
- Specific evidence based feedback from LA systems/processes (identify any in addition to existing ECC requirements)
- Relevance to other stakeholders
- Impact on wider policies, and to other schools (beyond ECC schools)

### **6 Future developments**

*Aim – explore ideas and views on how the programme might be further developed, integrated with other potential priorities, and more widely offered.*

### **Questions / Discussion / Prompts:**

- Relationship and interaction with other developing initiatives and priorities
- Explore group working options – both as an alternative and as an additional delivery mode
- Is the LA planning to continue with ECC

## **Instrument 22. Interviews with non opt-in schools**

*Assume with the head of a non opt-in school. Initial contact made through LA following LA group interviews. As a result the sample is likely to be skewed and therefore the findings will only be indicative of the kind of issues which are relevant, rather than necessarily providing a reasonable and balanced picture. It is anticipated that the interviews will be carried out by telephone.*

### **1 Introduction**

- Outline purpose and nature of interview
- Provide outline details of ECC and NC
- Emphasise programme is at a developmental stage and views will be feedback and taken in to account
- Emphasise semi- structured and open ended exploratory / discursive nature
- Confirm anonymity of responses, seek permission to make notes

### **2 School Context**

*Aim – build an understanding of the circumstances of the school and needs (in general terms) of the students*

#### **Questions / Discussion / Prompts:**

- Build a picture of the school situation and context
- Identify key resourcing limitations
- Identify other initiatives / interventions they are involved with

### **3 Awareness of ECC**

*Aim – establish how well the aims and potential value of ECC have been communicated, and the responsiveness and value of different communication channels*

#### **Questions / Discussion / Prompts:**

- Identify previous knowledge of ECC
- Discuss respondent's views and perceptions of ECC
- Identify key sources of information for new initiatives (eg. DCSF, LA others)
- Why did they not opt in to ECC

### **4 Meeting the needs of low performing students**

*Aim – identify how schools identify and meet the needs of low performing students primarily in terms of maths*

#### **Questions / Discussion / Prompts:**

- Screening / identification processes
- Role of support and specialist staff
- Are specific interventions made at an earlier / later stage
- Use of / experience of any other programme / interventions

- Discuss as appropriate – costs of alternatives, necessary training, sustainability, self evaluation.

## **5 Future policy developments**

*Aim – explore views on the needs of schools on how they might be supported in meeting the needs of low performing students*

### **Questions / Discussion / Prompts:**

- How important a priority is early literacy support
- Relationship and interaction with other developing initiatives and priorities
- Explore views on one to one and group working
- Funding issues and constraints