Trial Evaluation Protocol
CREST Silver

NatCen Social Research
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PROJECT TITLE	The CREST Silver Award programme
DEVELOPER (INSTITUTION)	British Science Association
EVALUATOR (INSTITUTION)	National Centre for Social Research (NatCen)
PRINCIPAL INVESTIGATOR(S)	Fatima Husain and Robert Wishart
PROTOCOL AUTHOR(S)	Rakhee Patel, Nico Jabin and Allison Dunatchik
TRIAL DESIGN	Two-arm cluster randomised controlled trial with random allocation at school level
PUPIL AGE RANGE AND KEY STAGE	13-14 years
NUMBER OF SCHOOLS	170
NUMBER OF PUPILS	Between 1,720 and 2,400
PRIMARY OUTCOME	Science attainment (Progress Test in Science)
SECONDARY OUTCOME	Confidence, attitudes to school, self-efficacy in science, future aspirations in science

Protocol version history

VERSION	DATE	REASON FOR REVISION
1.1	30/07/2018	Team changes, updated legal basis for processing under GDPR, new template tables, new risk related to NPD access delays
1.0	25/08/2017	N/A

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Intervention

The CREST Award programme is a UK-wide extra-curricular award scheme to help students build their Science Technology, Engineering and Maths (STEM) skills and demonstrate personal achievement through project work. CREST has four levels – Discovery, Bronze, Silver and Gold. Students (on their own or in a small team) develop their own project ideas and conduct the necessary desk-based and practical research with support from an educator (e.g. a teacher, club leader or supervisor). The programme aims to improve students' attainment and progression in STEM subjects and develop students' transferable skills for further education and future employment, including for example self-management, team working, communication and problem solving skills. The programme is coordinated by the British Science Association (BSA).

Physical or informational materials used in the intervention
At present, schools that are interested in delivering the CREST Award contact their local CREST coordinator, who provides them with access to teacher guides and additional support materials, and guides them through the registration process. The BSA are currently reviewing the process by which schools register and receive support and are moving to a more streamlined, digital process. This will be implemented in 2017 and so online remote support will be part of the intervention tested in this trial. It is likely that the online support will be supplemented with other forms of support. The BSA are currently piloting different approaches to this support (such as local peer network events and support from local science learning partnerships) and will select the final model based on learning from their pilot delivery. This will be decided before the trial begins in autumn 2017.

Procedures, activities and/or processes used in the intervention
Pupils can undertake a wide range of projects, including: literature reviews; engineering or design projects; science hypothesis testing; or science communication projects. BSA normally recommends that teachers who have not previously used CREST use one of the existing CREST project examples. These are designed to provide a framework or scaffold that allows sufficient flexibility for pupils to make decisions, and create their own, individual project.

CREST projects must include the following essential elements:

- 30+ hours of project work in total (which are normally completed within one academic year)
- Demonstrate evidence of working at least at the top end of Key Stage 3
- Pupil decision-making and creativity
- Reflecting and communicating on process and findings

Completed projects are submitted to BSA local coordinators for independent assessment against a set of 15 criteria[1].

Intervention providers/implementers
Pupils are supported in undertaking the CREST award by an educator, e.g. a teacher, technician, club leader etc.

Mode of delivery
Teachers support pupils to choose a project, supervise pupils through the projects and are a sounding board for pupils' ideas. They also submit pupils' work to their local coordinator for assessment.
The BSA recommends linking with a science mentor, in or out of school, but this is not an essential component of the award.

Location of the intervention
The location of the intervention is flexible and options include:

- during science, design, technology or maths classes
- during a lunchtime or after school club (most frequently used by schools)
- a placement outside of school

Duration and dosage of the intervention

[1] These criteria relate to the scientific process and include evidence that the project has been planned, delivered and interpreted appropriately. The full set of 15 criteria are listed on page 2 of this form, which students are required to submit at the end of their project: http://www.crestawards.org/site-content/uploads/2016/10/CREST_Silver_student_profile.pdf

There is no specified duration for a CREST project although typically projects are completed over one to two terms. BSA specify that a minimum of 30 hours of project work must be undertaken. There is no formal monitoring by the BSA of the time schools and pupils spend on CREST projects. The independent assessment of the projects assesses projects against 15 key criteria. If few of these criteria are met, this is taken as an indication that insufficient time has been spent on the project.

Strategies to maximise effective implementation
To support implementation there is a bank of documents available on the CREST website, including student and teacher guides and a searchable suite of project resources.

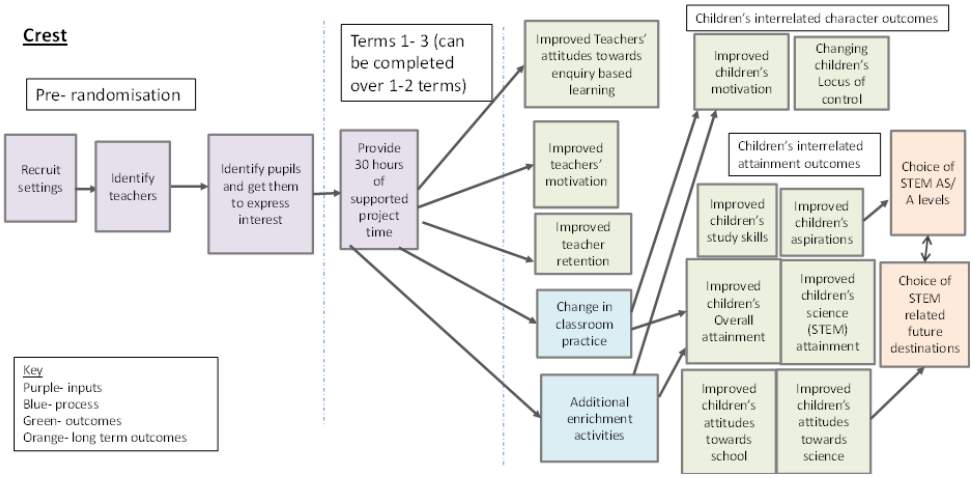
Due to the flexible nature of CREST, implementation varies widely. Students complete their projects in a wide variety of settings, with different levels of support, and over different lengths of time.
If the BSA considers that elements have not been completed adequately, it invites pupils to address the gap and re-submit the project.

Study rationale and background

The rationale for CREST is that because the curriculum offers limited opportunities for inquiry-led learning, there is a need for enrichment activities. In inquiry-led learning pupils learn by solving a problem or answering a question, rather than being presented with information by a teacher. There is some relatively strong evidence that inquiry-led learning has a positive impact on students' attainment in science[2,3.] This evaluation seeks to establish if the CREST Silver award has an impact on science attainment. As the programme has not been evaluated before, there is genuine uncertainty as to whether it will have an effect (equipoise).

Working closely with the British Science Association the intervention logic was set out and is depicted in Figure 1.1.

Figure 1.1 Logic Model for the CREST Silver Award



Significance

In 2016 Pro Bono Economics published research to assess the impact of the CREST Silver Award on science scores and STEM subject selection[4]. The evaluation used BSA data on students starting Silver CREST Awards between 2010 and 2013, which was linked to the National Pupil Database (NPD). This enabled BSA to triangulate data on CREST participants, pupil characteristics, attainment, and subject selection. Propensity Score Matching was used to create a comparison group of students

[2] Cotabish, A., Dailey, D., Robinson, A. and Hughes, G. (2013),
'The Effects of a STEM Intervention on Elementary Students' Science Knowledge and Skills. School Science and Mathematics', 113: 215–226.
[3] Lui, Lee & Lin (2010),'Multifaceted Assessment of Inquiry-Based Science Learning', Educational Assessment, 15, 69-86.
[4] Jones et al. (2016) "Quantifying CREST: what impact does the Silver CREST Award have on science scores and STEM subject selection?", Pro Bono Economics research report for the British Science Association (BSA).

who did not take part in CREST, but had similar characteristics to those who did. The research found that students who took CREST achieved half a grade higher on their best science GCSE result, compared to the statistically matched comparison group. It also found that CREST students eligible for Free Schools Meals (FSM) saw a larger increase in their best GCSE science score compared to a matched comparison group of other students also eligible for FSM. The evaluation recommended building on the analysis through an RCT.

This study builds on that recommendation and is a RCT to evaluate the effectiveness of the CREST Silver Award, when delivered to Year 9 pupils in schools with average or above average proportions of everFSM students. NatCen Social Research as the independent evaluator will be responsible for randomisation of pupils, pupil testing, undertaking the process evaluation and conducting independent analysis for the EEF report.

Impact Evaluation

Research questions

The evaluation of CREST aims to answer the following principal research questions:

- What is the impact on science attainment of Year 9 pupils' participation in the CREST Silver programme?
- How do these impacts differ by everFSM eligibility and gender?
- What are the effects of the programme on intermediate outcomes along the hypothesised causal chain such as pupils' confidence and aspirations?

Design

The evaluation will be conducted as a two-arm cluster (school-level) randomised controlled effectiveness trial of the effect of CREST Silver on the science attainment of pupils that expressed an interest in participating in the programme.

A randomised controlled trial (RCT) uses the mechanism of randomisation to assess the causal impact of an intervention. Random assignment of schools to treatment and control groups ensures that, in principle, the two groups have the same baseline characteristics. Any differences at baseline are due to chance and are accounted for in the statistical analysis. As a result, the discrepancy in outcomes at the end of the trial can be attributed to the intervention itself. The outcome on which the effectiveness of the trial is measured is science attainment. As an effectiveness trial, the evaluation aims to test the effect of the intervention under real-life circumstances, and as such allows for a wider variation in implementation and fidelity.

Schools assigned to the control condition will implement a business-as-usual approach to teaching STEM subjects and may choose to offer participation in CREST Silver in the following academic year to pupils of the new Year 9. An incentive of £600 will be offered to all control and treatment schools to participate in the trial. The decision has been made to offer an incentive to both groups as the low cost of the intervention (£10 per pupil) makes it relatively accessible to schools. The incentive is intended to mitigate the risk that schools are approached about the trial but choose instead to purchase the intervention and offer it outside of the trial.

Trial type and number of arms	Two-arm, cluster randomised control trial
Unit of randomisation	School
Stratification variables (if applicable)	Percentage of pupils with everFSM status; and percentage of pupils achieving 5+ A*-C or equivalents including A*-C in both English and mathematics GCSEs in the academic year in 2016

Primary outcome	variable	Science attainment
	measure (instrument, scale)	GL's Progress Test in Science
Secondary outcome(s)	variable(s)	Confidence, attitudes to school, self-efficacy in science, future aspirations in science
	measure(s) (instrument, scale)	confidence (from the National Citizenship Service baseline questionnaire), attitudes to school (from the Longitudinal Study of Young People in England), self efficacy in science (from the Welcome Trust Pathways survey) and future aspirations in science (from the Welcome Trust Pathways survey)

Randomisation

Schools will be assigned 50:50 to either treatment or control group. Randomisation will be stratified by schools' proportion of pupils who have everFSM status and by prior attainment, measured as average GCSE outcome. On each dimension, recruited schools will be split into two equally-sized groups of high and low measures of the dimension's scale. Assignment will take place within the combined groups.

Participants

Schools will be recruited by the BSA in South East England and London, initially drawing on the population of schools that have previously applied to participate in the CREST programme. BSA will also recruit schools through local Science Learning Partnerships.

To be eligible, schools' proportion of pupils eligible for everFSM has to be at least as high as the England average. Schools must not have participated in CREST Bronze, Silver or Gold in the academic year prior to the intervention (i.e. in 2016/17), although they may have participated in CREST Discovery. Schools must also not be in special measures.
During the recruitment, schools will identify a teacher who will lead the CREST programme in with students from Year 9. The teacher involved must not have participated in CREST Bronze, Silver or Gold in the past.

In order to participate, schools must also agree not to take part in CREST or Go4Set (a 10 week STEM project that incorporates CREST) with the same pupils if they are assigned to the control condition, if possible until the end of the GCSEs.

Schools will be required to recruit between six and 35 pupils (which allows for the possibility of recruiting a whole form), of whom 25% should be eligible for free school meals (under the everFSM category). These pupils will sign up by completing an expression of interest prior to randomisation. Only pupils that sign up will be part of the trial.

Schools in both the control and treatment groups will be offered £600 (£150 at the start of the project and £450 at the end, on completion of the outcome measures). Pupils in schools assigned to the control group will be offered a £10 high street voucher, which will be provided shortly after randomisation.

A Memorandum of Understanding (MoU) will be signed by the headteacher of the school, the BSA and NatCen as part of the recruitment process. The document will set out the roles and responsibilities of the three parties as described above.

Sample size calculations

	OVERALL	FSM
MDES	0.18	0.25

Pre-test/ post-test correlations	level 1 (pupil)	0.50	0.50
	level 2 (school)	0.20	0.20
Intracluster correlations (ICCs)	level 2 (class)	0.18	0.18
Alpha		0.05	0.05
Power		0.8	0.8
One-sided or two-sided?		2	2
Average cluster size		9	2
Number of schools	Intervention	107	107
	Control	107	107
	Total	214	214
Number of pupils	Intervention	920	230
	Control	920	230
	Total	1840	460

At the time of publishing the trial protocol, we estimated, using PowerUp! this study to be powered to detect an effect of 0.18 standard deviations based on the above assumptions. In addition to these, we also assumed a school-level attrition rate of 10% and loss-to-follow-up at pupil level at 10%.

Outcome measures

The primary outcome measure is a standardised measure of science knowledge, GL's Progress Test in Science. This is an adaptive assessment that covers physics, chemistry, biology and curriculum knowledge as well as knowledge of concepts that relate to working scientifically. This will be administered in May/ June 2018 to all pupils that signed up. GCSE science results, available after the end of Year 11, will provide a secondary academic outcome measure.

Other secondary outcome measures will assess soft outcomes in May/ June 2018. In particular, the trial will examine impact on:

- Confidence, using a scale included in the National Citizenship Service evaluation baseline questionnaire
- Attitudes to school, using the Attitudes to School scale from the Longitudinal Study of Young People in England (LSYPE) Wave 1) questionnaire
- Young people's self-efficacy in science (Wellcome Trust Pathways survey)
- Young people's future aspirations in science (Wellcome Trust Pathways Survey)

Project leads at the BSA have been involved in the selection of outcome measures to ensure that the measures are appropriate for the intended outcomes and impacts of the intervention. NatCen will confirm with the BSA that there will be no changes to the intervention as a result of knowing the test. NatCen will also ensure that schools are not informed of the assessment that will be used.

The tests will be administered by NatCen invigilators blind to the treatment status of the pupils being tested, rather than teachers, to ensure there is no subtle bias in administration of the assessment. The test provider, GL, will score the assessments and will also not be informed of whether the school is part of the intervention or control group.

Analysis plan

The primary analysis will estimate the intervention's impact on science attainment, as measured by GL's Progress Test in Science, of pupils that signed up to the intervention, using an intention-to-treat

approach. The analysis will use analysis of co-variance (ANCOVA) a multi-level model accounting for baseline Key Stage 2 outcomes in Science at pupil and (averaged) at school level. Impact will be expressed as standardised effect size using Hedge's *g* approach.

If differential loss-to-follow-up creates an imbalance between trial groups, the sensitivity of the estimated effect will be assessed by approximating missing outcomes using multiple imputation.

A second sensitivity analysis will include a wider range of pupil and school-level characteristics as covariates. Pupil characteristics will include gender and age. School level characteristics will include whether or not the school is single sex or co-ed; the proportion of SEN pupils within the year group, on the assumption that a higher proportion of SEN pupils indicates a less selective school and thus lower likelihood of successful implementation of CREST; a deprivation indicator (Index of Multiple Deprivation 2015), on the assumption that higher general deprivation reduces the likelihood of successful CREST implementation. All covariate data will be obtained from the National Pupil Database or publicly available data.

The complier average treatment effect (CACE) will be estimated to show the effect of CREST on those actually participating in the programme. Participation will be defined as submitting a CREST project, and will be measured through data provided by BSA.

All of the analyses described above will be repeated in January 2021 with GCSE results as secondary outcome measure. The results will be reported separately.

Three subgroup analyses will be carried out. These are considered indicative and no adjustment for multiple hypothesis testing will be made.

Firstly, the effect of the intervention on the primary outcome for FSM pupils will be calculated using a separate model including only FSM-eligible pupils. In addition to the subgroup analysis an appropriate statistical test of interaction will be used to assess whether there is a difference between FSM and non-FSM pupils. The everFSM indicator in the NPD will be used to conduct this analysis.

Secondly, a separate analysis will be conducted to assess differences in outcomes by gender.

Thirdly, a model will explore whether there are indications that different ways of implementing CREST improve or reduce effectiveness. The types of implementation to be explored are: use of after-school or lunch-time clubs; and whole-class implementation; It is expected that sub-group sample sizes will be low, so this analysis will very much be exploratory.

Having the UPNs will allow EEF to continue to track the future academic progress of these pupils if desired.

Implementation and process evaluation

Research questions

We will conduct a process evaluation alongside the RCT. The main research questions that will be answered by the process evaluation are:

- What are the effects of the programme on hypothesised intermediate outcomes along the causal chain such as pupils' confidence and aspirations?
- How is the programme delivered, and what are the key challenges in the delivery of the programme?
- What is the per-pupil cost of the CREST Silver Award programme?

The key dimensions of implementation that the process evaluation will assess are: fidelity, dosage, quality, reach, responsiveness, usual practice and adaptation.

Methods

The process evaluation will include a number of elements, each of which is described in turn.

School surveys (pre and post intervention)
Before the intervention and before randomisation the teacher named on the MoU – the main contact for the trial – will complete an online survey. The survey will gather contextual information on the school, such as the types of extracurricular STEM activities the school is planning to offer in the next two academic years as well as what they have been doing over the past year and the reasons for the school's interest in joining the scheme. Alongside the survey, schools will be required to provide background information on pupils who have expressed an interest in taking part in the intervention. This will include the Unique Pupil Number (UPN), date of birth, first name, surname and FSM eligibility. This pupil information will be collected in an Excel spreadsheet template that will be uploaded by schools on a secure NatCen website.

The post-intervention school survey will gather up-to-date contextual information on the types of extracurricular STEM activities control schools have delivered throughout the academic year, in order to build an understanding of what business as usual means in these schools. In the treatment schools, the post-intervention survey will examine fidelity to the intervention and adaptation by including questions on how many pupils completed the project and how CREST was delivered (over what time period; whether as a lunchtime club, after school cub or whole class activity; support materials used; use of mentors; involvement of any external partners; location in school; whether the 'plan,do, review' model of CREST was followed). It will also assess the dosage of the intervention, asking schools to report on the number of hours of project work undertaken by pupils to assess whether the minimum of 30 hours criteria has been met. Its other main purpose will be to collect **cost information** from all intervention schools (refer to **Cost** section below).

Pupil surveys (pre and post intervention)
Before the intervention and before randomisation, all pupils taking part in the trial will be invited to complete a survey, which will provide a baseline of pupils' non-cognitive outcomes (e.g. self-efficacy, attitudes to science, career aspirations). It will also gather contextual information on STEM related extra-curricular activities that pupils intend to take part in in Year 9 or have already taken part in.

Letters will be sent to each school, with a letter for each pupil with a link to the online survey. The teacher named on the MoU, the main contact for the trial, will distribute the letters and provide an opportunity for pupils to complete the survey in school. As part of the pre-intervention survey, pupils will be asked why they would be interested in taking part in CREST (see 4.2, Expression of Interest)

The post intervention online survey will be a short follow-up online survey. The questions on non-cognitive outcomes and STEM related extra-curricular activities will be repeated. The post-intervention pupil survey in intervention schools will also measure responsiveness by asking questions about pupils' views and experiences of the Silver CREST Award. As for the pre-intervention survey, the named school contact will receive letters for the eligible pupils inviting them to complete the survey. We will request that teachers facilitate completion of the survey during school hours.

Case studies at treatment schools
Case studies will be conducted with ten treatment schools. The aim of the case studies is to build a broader understanding of programme implementation and variation between schools.

Pre-intervention telephone interviews with the CREST Award educator and the Head of Science/ Head of Key Stage 4 will be conducted. These interviews will aim to gather information on school context, resource requirements, and the expected benefits of programme participation.
Follow-up face-to-face interviews with the CREST Award educator (post intervention) in the ten case studies schools will provide up-to-date contextual information, gather information on the perceived benefits of programme participation, as well as implementation fidelity and key delivery challenges and successes

Post intervention discussion groups with pupils will provide information on pupils' experiences of the programme and the perceived benefits of taking part.
Each interview and discussion group will last approximately 45 minutes.

Interviews with the Head of Science/ Head of Key Stage 4 at control schools
Post intervention telephone interviews with the Head of Science/ Head of Key Stage 4 in five control schools will be undertaken to develop an understanding of business as usual in relation to STEM subjects in Year 9.

Analysis of MI data
BSA collects information on whether or not schools have submitted projects on behalf of pupils. We will analyse this data to inform the assessment of fidelity and responsiveness. In addition, we will analyse the proportion of the Award criteria that have been met in submitted projects to help assess the quality of the delivery of the intervention in treatment schools. We will also draw on information from the school survey about mode and format of delivery as part of the assessment of quality.

Cost evaluation

The schools surveys will be used to collect **cost information** from all intervention schools also. When evaluating the per pupil cost of the intervention the approach set out in EEF's published guidance will be followed. Calculating the average cost of delivery enables comparisons to be made with other interventions based on both the average effectiveness and costs incurred. The total cost per pupil will be calculated based on information provided by schools in the school post-intervention survey about direct and indirect costs incurred:

- Costs that will be collected and reported in monetary terms include: any equipment the schools purchased to support CREST projects; printing and photocopying costs'
- Information on indirect costs will include: the time required by the CREST Award educator to prepare and plan for CREST sessions; the time spent supporting and supervising pupils; time of any other staff in the school

We will provide schools with a simple template that they can use over the course of the year to log information on direct costs incurred and time spent on the intervention. We will then ask them to use this to enter information in the survey at the end of the year. To help maximise response, we will ensure questions are kept as simple as possible.

Ethics and registration

Informing parents
Schools were recruited and parents informed about the research before May 2018. Schools that sign a MoU were asked to send letters to parents/ carers of all Year 9 children. NatCen provided the letter electronically. The letter explained that the school was taking part in the study offered parents the opportunity to remove their child(ren) from the trial.

Pupil Expression of Interest (EOI) forms
At the start of the trial (and before May 2018) the main contact at each school received letters for all eligible pupils who wished to take part in the CREST Silver Award. The letters invited the pupils to complete a pre-intervention survey, which allowed them to express their interest in taking part. As explained in section 3.2, alongside the Expression of Interest component, the survey will measure baseline non-cognitive skills.

The CREST educator was asked to distribute the letters and organise a time for the online survey to be completed. It was made clear to all pupils that there is a 50/50 chance their school may not take part in CREST and that the reasons they gave for being interested in taking part in CREST or their survey responses in no way affected allocation to the intervention/control group.

Process for ethical approval
NatCen has a robust ethics governance procedure. Research projects are scrutinised by the NatCen Research Ethics Committee (REC). The committee consists primarily of senior NatCen staff. If necessary external research experts or professional experts ('lay people') may also be invited to review individual studies. Depending on the nature of the research and the perceived level of risk, projects undergo either an expedited review (scrutiny by the REC Chair) or a full review by the sitting REC.

For this evaluation we believe that a full review is appropriate given the scale of the project, the range of research of tasks and the age of the children and young people involved.
The REC procedure is designed to provide ethical advice and guidance, and to ensure that all research undertaken by NatCen is ethically sound and meets the ethical standards of government and other funders. The process provides reassurance to potential research participants and, where relevant, to gatekeepers through whom they are approached.

The REC has reviewed the design of this project, provided guidance that has been incorporated into this final protocol, and will continue to be involved on an ongoing basis. For example, the REC will review any changes to the study and consent and recruitment materials as they are developed.

Data protection

GDPR
The National Centre for Social Research (NatCen) is the **data controller** and **data processor** for this project. This means that we are responsible for deciding the purpose and legal basis for processing data. From May 2018, the legal basis for processing data is "legitimate interest". A privacy notice was published on the study page on NatCen's website on May 28, 2018 and issued to all schools on June 14 2018. It can be found here: http://natcen.ac.uk/taking-part/studies-in-field/evaluation-of-the-crest-silver-award-programme/

All data collected for this study will be kept securely. We will safeguard the anonymity of all participants and no school, staff member or pupil will be named in any outputs or reports. School or pupils that decide that they no longer want to take part in the study may on request have their data deleted at any point and prior to the submission of a draft report to the EEF.

At the end of the research, all pupil data will be anonymised before being archived. Once the data is archived, EEF will take on the responsibility of **data controller**. All personal information, and any other data held on the project, will be securely deleted once the project is complete in July 2019.

Secure data handling
NatCen has a range of policies and practices in place to ensure secure data handling. These are summarised below.
We categorise all data and files to 5 different levels, dictating how they are stored, handled and transmitted. The sample data for this study is Level 3 - 'Respondent Confidential'. Only those who carry out research tasks and those who need to check or process the data will have access to names and addresses. Our confidentiality measures for Level 3 data include:

Encryption
All staff and freelancer laptops that hold Level 3 respondent confidential data have a hard drive encrypted using PGP Whole Disk Encryption by Symantec. This means that should the laptop be lost or stolen, the data contained on the hard drive is inaccessible. The encryption used by PGP is certified to FIPS 140-2 standards. We also use encrypted digital recorders for qualitative interviews,

Password Policy for office based staff
- Complex passwords, change every 30 days
- 10 password history automatically enforced
- Account locked out after 5 wrong attempts

Access control
- Access to project data is managed via compliant segregation
- Strict access control policy, limited to named authorised individuals
- Unique serial numbers assigned to avoid use of personal information.

Data Security Plans
- Project data security plan detailing data security procedures.
- Rights of access recorded before granted.

File Systems Auditing

- File System Auditor used to monitor activities logging what was created, updated, moved, renamed and deleted and when.

Personnel

Project team at BSA

The project is managed in the Education team at the British Science Association. The trial manager will be Beejal Parekh (Education Manager), assisted by Helen Rafferty (Project Officer), with oversight from Maria Rossini (Head of Education).

Evaluation team at NatCen

The project is managed in the Children, Families and Work team at NatCen. The trial was initially led by Rakhee Patel (Research Director) who left NatCen and was replaced by Fatima Husain in May 2018. Mags Anderson (Senior Researcher) who was the day-to-day project manager left NatCen in May 2018. Fatima is being supported by Kaushi Attygalle and Nevena Illic, Researchers, who have worked on the trial from the outset. Fatima is being supported by Kaushi Attygalle and Nevena Ilic, Researchers, who have worked on the trial from the outset. The research team will work closely with other departments and specialists at NatCen including the evaluation team, statisticians and the Operations Department. Nico Jabin, led on randomisation and Robert Wishart (Senior Researcher, Evaluation), supported by Martina Vojtkova (Head of Evaluation) will carry out the impact analysis.

Risks

The main risks to the project are:

Recruitment of schools and pupils. The BSA team will need to recruit at least 214 schools to power the study as originally planned. It may be difficult to recruit such a large number of schools. To mitigate this risk, the BSA are employing a dedicated officer to liaise with schools and also working through existing networks. NatCen will support the recruitment process by providing clear, concise information on the evaluation requirements for any communications with schools. They will also be available to answer any questions schools might have before signing a MoU and to provide reassurance that the trial is legitimate. NatCen and BSA will have regular meetings during the recruitment period so that progress can be monitored closely.

Non-participation in post-intervention pupil testing and school and pupil surveys, particularly among control schools. There is a risk that schools are unwilling to participate in the post-intervention research tasks. This will be addressed by setting out clearly the requirements for the trial in the MoU; staging payments of the £600 incentive with a larger proportion to be paid upon completion of the post-intervention research tasks; and providing schools with clear instructions at the start of the project on what needs to be done and when.

Insufficient numbers of FSM pupils. Given that the CREST Silver Award is typically less likely to be undertaken by everFSM pupils, failure to recruit enough FSM pupils is a substantial risk to the trial. To address this, the MoU will specify that at least 25% of pupils participating in the trial in each school must be eligible for everFSM. This will be monitored closely during the recruitment stage. In addition, the overall percentage of pupils who are everFSM at each school will be monitored.

High levels of opt out. Parents will receive opt-out consent forms, and the evaluation team has assumed that only small numbers of families will return these forms based on other trial responses. However, it is possible that parents may not want their child to participate in the study, or a large number of opt-out forms may be received within certain schools. This is not typically a problem in EEF trials but the evaluation team will monitor this closely.

Access to NPD data. The new GDPR compliant procedures and processes that are being implemented by NPD and the Department of Education are likely to result in a delay in obtaining an NPD data extract for conducting. This has implications for the reporting milestones set out in the timetable below.

Timeline

Date	Activity	Responsible
December 2016 – May 2017	Schools recruitment	BSA
June - July 2017	Parental opt-out period	NatCen
September - October 2017	School pre intervention survey and collection of pupil data	NatCen
October 2017	Pupil pre-intervention survey	NatCen
October - November 2017	Qualitative – Pre-delivery staff interviews	NatCen
November 2017	Randomisation completed and schools notified	NatCen
Mid-November 2017	Delivery of intervention begins	BSA
May 2018	Delivery of intervention ends	BSA
April - July 2018	Qualitative – Post-delivery interviews, pupil focus groups, visits	Natcen
May 2018	School post intervention survey	NatCen
May-July 2018	Pupil post intervention survey and administering of science assessment	NatCen
July - August 2018	Marking of tests	NatCen (GL to do marking)
September-Nov 2018	Draft of report	NatCen
Dec 2018-Feb 2019	Peer review and finalisation of report	EEF and NatCen
January - March 2021	Obtain GCSE results from NPD. Repeat analysis and report	NatCen
March 2021	Peer review of updated report	EEF and NatCen