Provision of Item Writing Services - Key Stage 2 Science Call-Off Contract

Item Writing Framework Agreement – STA 0128
Call-Off Contract No: STA-0128/25
Title: Provision of Item Writing Services for Key Stage 2 Science
Supplier: National Foundation for Educational Research (NFER)

Pursuant to the terms of the Item Writing Test Framework Agreement (STA 0128):

Service Commencement Date:	20/01/2020
Call-Off Contract End Date:	4 November 2020
Call-Off Contract Value:	REDACTED
Relationship Manager for Department for Education:	REDACTED
Contract Manager for the Department for Education:	REDACTED
Relationship Manager for the Supplier:	REDACTED

1. Background

This call-off contract is for the provision of item writing services for Key Stage 2 Science, including the drafting of potential items and their mark schemes, ready for formal trialling.

2. Functional Requirements

Assessment type:	National curriculum assessment – for pupils at the end of key stage 2
Item Development and Design	The number of marks stated for the work package outlined below is the total number of marks which must be provided at final handover. Suppliers will need to ensure sufficient items are created to allow for any losses during the process.
	4.4.1 Key Stage 2 Science The items are destined for tests which assess the new National

Curriculum programme of study for key stage 2 Science. STA will provide a copy of the new curriculum with PoS references.

STA requires 60 marks of new and acceptable science items at key stage 2. The items should be written to match the cognitive demand ratings as described in the new test framework tor 2016 for complexity and item response. The questions should be set with contexts that are appropriate for KS2 and reflect the curriculum. Items should be written specifically to address the wording of the strands of the new PoS.

There will be one work package worth 60 marks.

The supplier must ensure that, at handover the items reflect the proportions requested at start up across the three core areas of science.

Within each of the three science areas, items should assess between 25-35% of Working Scientifically. Some questions may have more items than others that assess working scientifically, depending on the appropriateness of the context for these types of item, and some questions may have no items assessing working scientifically.

Each question written should be between 5-7 marks.

The supplier must ensure that, at handover, the total marks of the items are in the following approximate proportions for the complexity rating within each science area written (Biology, Chemistry and Physics):

- knowledge and comprehens ion (kc) ⁻ 30-50%
- application and analysis (aa) 30-50%
- synthesis and evaluation (se) 10-30%

The supplier must ensure that, at handover, the total marks of items are in the following approximate proportions for the response rating within each core area written:

- selected response (1) ⁻ 35-50%
- short answer (2) ⁻ 30-40%
- extended response (3) ⁻ 15-30%

The letters or numbers in brackets indicate how items should be classified on the page. For example, item (a) could be 1 mark, attributed to aa2 which would indicate an application and analysis short answer item.
In the new curriculum, the strands within the programme of study are not numbered. STA has allocated codes to each strand so when questions are written, items can be easily identified as assessing a particular strand. When writing questions, the following details should therefore be provided next to the mark box for each item: PoS strand, complexity rating, response rating and number of marks. This information will also be contained within the classification spreadsheet.

Suppliers must aim to write questions with a minimum of 5 marks. On

average it is expected that questions will contain in the range of 5-7 marks. For a live test, questions are laid out as a double page spread; however at this early stage of development, questions are permitted to run over three 44 pages if necessary.

Coverage:
STA will be able to advise the successful bidder of the specific requirements at the start up meeting.

For this procurement, one work package of 60 marks is required to fill gaps in specific parts of the programme of study for which more marks are required to ensure we have coverage of the full programme of study.

Working scientifically will be assessed within the context of the three core areas. The range of working scientifically questions will sample the full breadth of the new science National Curriculum key stage 2 programme of study - see new framework for 201 6.

The work package is described in the table below. See the new 2016 framework and the new curriculum for detailed descriptions of the strands covered within each programme of study area.

	Core Area	Programme of study area
Work Package 1	Biology	Topics to be discussed at the start up meeting once the requirements of the work package have been finalised.
	Chemistry	Topics to be discussed at the start up meeting once the requirements of the work package have been finalised.
	Physics	Topics to be discussed at the start up meeting once the requirements of the work package have been finalised.

The questions should include a range of item types including:

	those requiring pupils to use scientific reasoning to justify their answers
	those requiring pupils to produce solutions to multi-step problems . those requiring pupils to select, and where necessary use, a ro riate information/data to solve a problem
	those requiring pupils to deduce, infer or interpret information, events or ideas
	The questions should be in the context of the science assessment targets and aim to explore the breath of the programme of study, for example: • Include a range of domestic and environmental contexts that are familiar and appropriate for KS2 pupils, including questions based on current scientific research, if possible. • Look at the part science has played in the development of many useful things. • Use a range of sources of information and data. • Use examples of scientific practice that are appropriate for use in the classroom.
Coding Frames	Coding frames must be developed for all items. The coding frames must provide sufficient and clear guidance to: • allow marks to be allocated reliably, with consistency and accuracy • enable marking to be manageable • enable the marking of the tests to be effectively standardised • have a principle to define what is correct Include examples of responses that illustrate the range of correct responses and possible incorrect or insufficient responses. Ideally, coding frame exemplars should be drawn from informal trialling, where the items have been trialled. The coding frames should • aClearly and succinctly communicate the marking principles for creditworthy and possible non-creditworthy responses for each item • Be straightforward to apply and recognise and reward pupils' responses appropriately A template for coding frames will be provided at start up meeting.

Item and coding frame design	Prior to Pre-trialling Handover, items can be created in Adobe InDesign or Microsoft Word 2016 as preferred by the agency with the understanding that large amendments are likely to be required after the interim review meeting and before informal trialling. Coding frames should be presented in Microsoft Word 2016 (or equivalent). For Final Handover, all items must be designed, using Adobe InDesign (STA currently uses Adobe InDesign CC, 20'19 release) and provided item writing templates and guidance, such as they match the supplied key stage 2 tests in relation to all design elements including font, font size, spacing, diagram style and illustration style. Templates and the requirements of the Design Specification will be provided to all winning bidders at the start-up meeting. Coding frames should be submitted in Microsoft Word 2016 (or compatible subject to prior agreement) at Interim and Final Handover (see below). There is no requirement to create Adobe InDesign versions of the coding frames. All content in coding frames handed over to STA should be fully editable in Microsoft Word 2016 (or compatible subject to prior agreement) with the exception of any complex artwork or diagrams which should be embedded in the appropriate place in the document.
Artwork, texts and other external materials	**Written test item texts, artwork or data** All graphics that are fundamental to the questions and coding frames (e.g. data sources, diagrams, photographs) must be produced and supplied at Final Handover. The Supplier must provide a statement at final handover to confirm that materials were developed by the Supplier and that IPR is assigned to the DfE in handover. Where handover includes externally sourced or commissioned materials, further information must be provided as described below. Where texts, artwork or data **have been commissioned** to an external, third-party organisation, please include the original material, • contact details for the creator of the material • a statement confirming assignment of the intellectual property rights ("IPR") in the material from the creator to DfE. Where there is a **third party owner** of any materials, it should be referenced as described below.

	Referencing source materials and artwork Any materials using third-party externally sourced **texts**, **artwork** or **data** need to be fully referenced; including - title, - name of copyright owner, - name of the author/editor/creator, - details of the edition, publisher - page/location of the material within the source. If sourced from the web, a print out of the original website, showing the relevant artwork or data must be included.
Item classification	The Supplier must accurately classify all items according to the fields on the item classification spreadsheet, and present the item information on the spreadsheet template supplied. An example spreadsheet is provided in Annex B and final version will be provided to successful supplier(s) at or before the start-up meeting. This spreadsheet must be finalised and included with the materials presented at Final Handover (see below).
Pre-trial Handover	One week prior to the pretrial meeting, sufficient materials should be submitted to be able to hand over the required material at the end of the project and allow for some attrition throughout the process. Items and coding frames must be handed over in hardcopy - one complete collated set is required. The materials need to be as finalised as possible in terms of content and wording, and any images or diagrams must be fit for purpose, even if they are not final. At this stage, it is preferable for materials to be presented in Microsoft Word (or equivalent), with the layout being reflective of the agreed template without needing to replicate it exactly - the focus should be on the content and wording of questions rather than the design and layout.
Pre-Trial Meeting	The purpose of the pretrial meeting is to agree which items need to be informally trialled and which do not, within the Supplier's available resource. It will also be used to determine any amendments which need to be carried out to those items being trialled before they are presented to pupils. The final decision as to which items are trialled will lie with STA. Suppliers must ensure that sufficient materials are presented to STA prior to this meeting to ensure that the agreed number of items and/or marks as defined for each subject are available for handover at

the end of the contract.

Any item or stimulus produced for this contract that is presented to STA forthe pretrialling meeting and which is not selected by STA as being part ofthe Final Handover is owned by STA and can be developed further by STA for use in future test cycles. These items must not be used by the supplier for any other contract.

If insufficient items are selected for Final Handover to fulfil the requirements of the work package, the supplier may provide substitute items which have been through the full process - including informal trialling - or may provide a reduced amount of items at a reduced cost to be agreed with STA.

The meeting will also be used to agree the format and content of the informal trialling report.

The outcome of this meeting will determine the final cost for informal trialling.

Informal Trialling	The primary aim of informal trialling is to aid development of mature items and to aid coding frame development. Suppliers must ensure that as far as possible those individuals, or the key individual, who have devised the items (the Item Writer) conduct trialling personally. It is the supplier's responsibility to ensure that guidance is given on promoting the safety of the pupils and that the schools' safeguarding principles are followed.
	The trial is to get first hand feedback on the language being used, area being assessed, and the interpretation and understanding of the items by pupils and teachersl. Whether or not a pupil answers correctly is of secondary concem, rather that they understand what is being asked of them regardless of their answer.
	Established item types or those where pupil behaviours can be accurately or reasonably predicted do not have to be trialled.
	Each item should be trialled with at least 15 pupils, and those pupils should have been taught the particular curriculum / topic area the item is assessing, or have been taught an equivalent programme of study. Pupils should be of an appropriate age and overall should show the range of abilities expected at the end of key stage 2. The items should be discussed with pupils in small groups of 4-6 pupils. It is not expected that trialling samples will be representative.
	Suppliers should provide details of the volume of items they will be able to trial with their Item Writers conducting the trialling and any interviews, and provide detail of their trialling model to ensure items and coding frames are improved or validated as a result of the trial. Suppliers should also provide the following costs:
	- informal trialling - fixed costs - informal trialling - variable costs based on trialling 100% of the items written for this contract
	There is no requirement to collect quantatative data as a result of this trial as the nature of the samples will not be representative. Any feedback from the trial will consist of qualitative data and evidence only.

	STA staff may wish to accompany the trialling agency on a small number of visits to schools to observe, so dates and locations of schools where trialling is taking place are to be provided to STA at least two weeks in advance of the first trial taking place. For any visits STA staff undertake, they should be provided with a clean set of the informal trialling booklets and coding frames for the tests they are observing. At the start of the informal trialling STA should be sent a clean hard copy of all the Informal Trialling booklets and coding frames. Informal trialling should be completed by 21 July 2020, as this will make it considerably easier to meet post-trialling deadlines. If trialling takes place after this date, any risks to the delivery of the requirements will be borne by the supplier. Expected outputs from the trials should be by exception only and should include: • child-level feedback from discussion in small groups with the administrator on their experience of the items and their level of understanding • teacher feedback on the same • detailed amendments to items and coding frames as a result of the trials, including rationale for all changes Qualitative feedback from the informal trial will be presented at the interim handover meeting in a separate word document with a short paragraph for each item as required.
Interim Handover	Interim Handover must occur no later than week beginning 1st September 2020. Supplier to provide copies of all materials - including amendments following informal trialling - that are proposed to go forward to final handover. Where final versions are not available, a sketched outline or layout of any proposed illustrations or graphics should be provided, or a suitable placeholder graphic. The following materials must be sent to STA: • InDesign files (STA currently uses Adobe InDesign CC, 2019 release) of at least 10% of the total marks required at the interim handover stage in order for STA to check that the materials comply with the design specification (see Annex D and design guidelines and templates provided at project start-up), software compatibility and quality requirements. For this purpose, the files need to be submitted according to the design guidelines and templates (to be provided at the start-up meeting) but do not need to be the latest or final versions of the files. The remaining items to be handed over in InDesign or MS Word 2016 (or compatible) format. • Microsoft Word 2016 (or compatible subject to prior agreement) files for all coding frames. • PDF versions of all items - the PDF of items should also be compiled into one file containing all test items/questions. • PDFs of the questions and coding frames with the suggested mark-ups or amendments as a result of informal trialling and any

	other items that were not trialled. The mark-ups and amendments can be handwritten on and scanned in for the PDFs.
	- Informal trialling report. - Item classification spreadsheet in Microsoft Excel 2016 (or compatible), including any all information as indicated by the supplied template (Annex B). - Summary table showing coverage across the content and cognitive domains. As a result of informal trialling, item writing agencies will need to send to STA the following documents prior to the interim handover meeting: - Three clean hard copies of all the Informal Trialling booklets and coding frames (these are to be sent to STA at the same time as the start of the informal trialling in June/July). - A set of materials containing the suggested mark-ups or amendments as a result of the informal trialling and any other items that were not trialled. - An electronic report listing the points specified and other feedback obtained during informal trialling, including rationale for any resulting changes made to items.
Interim Review	STA will review the materials submitted at Interim Handover. A meeting will be held between STA and the item writers to review those materials and outputs from informal trialling. Any further changes to materials will be agreed at this meeting. The Supplier will complete these and any other agreed amendments prior to final handover. Feedback will be provided at the Interim Review meeting on adherence to the Design Specification for those items submitted in InDesign format As a result of this feedback, the Supplier may be required to provide an additional set of all materials prior to final handover to ensure compliance with the Design Specification.
Final Handover	Final Handover Acceptance Meeting must occur during the week beginning 12 October 2020. The following materials must be handed over by the Final Handover Meeting: Hard copies: 15 copies for science of all items and coding frames – the copies should be collated into 15 packs for science – each pack should have a complete set of all the items and all the coding frames in the same order and labelled clearly. - Assignment of copyright. - Signed parental consent forms for any photographs of children. Electronic copies: - Single Adobe InDesign file for each individual test question with associated links and files (STA uses Adobe Creative

	Cloud).
	• Microsoft Word 2016 (or compatible subject to prior agreement) files for the mark schemes.
	• Individual PDF files for each question and associated mark scheme (i.e. two files per question).
	• Combined PDF of all items and another combined PDF of all mark schemes.
	• Source and copyright owner (including third party copyright) of any data, artwork and images used in the test items provided in the source column of the item classification spreadsheet.
	• All artwork and images used in the test items as unflaftened files with all layers intact within the image file where applicable. Please ask for clarification on specific file types which are acceptable.
	• A copy or copies of the updated classification spreadsheet(s), including a table summarising the number of marks assessing each assessment focus.
	• For the materials being presented, provide a summary table showing coverage and number of marks across the content and cognitive domains.
	• Closing checkpoint report.
	Assignments and/or licences of IPR in the commissioned and other third party works to be completed by the Final Handover Date - as stated in the PQQ and the Contract, and all documentation relating to IPR.
	In addition to the handover of the above materials, the purpose of the Final Handover meeting is to discuss the items and the rationale for all amends made. The meeting will be chaired by STA and take place in STA offices in Coventry or London.
Acceptance of Final Handover	Following Final Handover, STA will check the provided materials. If any errors are found, all materials will be returned to the supplier for a full check and for amendments to be carried out. An error free set of materials must be returned to STA no later than two weeks after the Final Handover Date.

3. Required Service Elements

The table below sets out the Service Elements and Deliverables the Supplier shall provide under this Call-Off Contract.

No	Deliverables/Outputs	Acceptance Criteria	Due Date
1	**Start-Up Meeting – FIXED DATE** Supplier will provide: • detailed plan for item and coding frame production for review and joint sign-off • detailed plan for when checkpoints will be held for review and joint sign-off • detailed project risk and issue log (Risk Log) for review and joint sign-off • Project Initiation Document (PID) STA will provide: • clarification of specific national curriculum references required for the work package	Project Director / Project manager (or equivalent) attend the Start-Up Meeting and provision of listed documents by agreed date.	21/01/2020
2	**Meeting one: Draft context and question meeting to discuss the 'overall plot' for each question and the curriculum coverage.** One week prior to meeting 1: 1) Provide brief summary of the contexts being used in each question and how they will be developed through the question. 2) At the meeting review the contexts and how the items develop through the question.	3 weeks after start up meeting, handover ten / eleven contexts and 'overall plots' demonstrating intended coverage (via portal).	Week beginning 24th February 2020
3	**Meeting two: review draft questions and discuss amends.** In the meeting supplier will provide:	Draft versions of questions. Agree amends to be made for pre-trial meeting.	Week beginning 13th April 2020

No	Deliverables/Outputs	Acceptance Criteria	Due Date
	• Each draft question with the related items indicating curriculum coverage and item classification • Examples of the artwork that will be used	The meeting will be chaired by STA. One of STA's independent curriculum advisors will attend this meeting.	
3	**Checkpoint Meetings and Management Information** To attend regular Checkpoint meetings at least once a month, although they may need to be more frequent at some stages of the project. These meetings may be held as telephone conference calls. Checkpoint reports to be submitted to STA two working days in advance of each Checkpoint meeting.	Project manager (or equivalent) attends each Checkpoint meeting on agreed date and submission of Checkpoint report two working days in advance of each checkpoint meeting.	To be agreed at start-up meeting
4	**Handover of materials for the pre-trial meeting** All materials written for the project to be handed to STA in both electronic and hard copy versions. There is an expectation that the item writing agency (IWA) write more items than needed because of attrition following review and informal trialling.	Sufficient materials submitted to be able to hand over the required material at the end of the project and allow for some attrition throughout the process.	One week prior to the pre-trial meeting
5	**Pre-Trial Meeting** To agree which items need to be informally trialled and to agree any amendments required to items prior to trialling taking place. To agree the format and content of the informal trialling report.	Project manager (or equivalent) attends meeting on agreed date. The meeting will be chaired by STA. One of STA's	Week beginning 11th May 2020

No	Deliverables/Outputs	Acceptance Criteria	Due Date
	The outcome of this meeting will determine the final cost for informal trialling.	independent curriculum advisors will attend this meeting.	
6	**Informal Trialling – Critical Step** It would be desirable from a school and agency perspective for informal trialling to be completed before the end of the summer term (in the UK). Items amended as per pre-trial meetings and agreed items informally trialled with specified number of pupils. Handover of three hardcopies of all Informal Trialling booklets and coding frames.	Required amendments completed before trialling. 100% of agreed items trialled with specified number of schools and pupils. STA are notified of possible trialling locations two weeks before the start of the trial.	To be completed by week beginning 13th July 2020
7	**Interim Handover – Critical Step** Provide electronic copies of all draft item and coding frames, informal trialling report and draft item classification spreadsheet(s). Also provide electronic copies of items and coding frames with suggested mark-up or amendments as a result of feedback from informal trialling (these can be handwritten and scanned in). There should be clear evidence of how those amendments are intended to improve item functioning. Any items which are rejected after informal trialling must be substituted with a suitable replacement item and accompanying coding frame, including any proposed amendments if appropriate.	100% of drafts of all materials required for completion of work package received electronically by agreed date and to criteria specified in section 4.5. All items informally trialled and being considered for Final Handover have received positive feedback from teachers and/or pupils;	Week beginning 24th August 2020

No	Deliverables/Outputs	Acceptance Criteria	Due Date
	Provide a summary table demonstrating the coverage of the interim handover materials against the number of marks, response types, content and cognitive domains specified. The Contractor must hand over InDesign files (STA currently uses Adobe InDesign CC, 2019 release) of at least 10% of the total marks required at the interim handover stage in order for STA to check that the materials comply with the design specification (see Annex D and design guidelines and templates provided at project start-up), software compatibility and quality requirements. For this purpose, the files need to be submitted according to the design guidelines and templates (to be provided at the start-up meeting) but do not need to be the latest or final versions of the files. The remaining items to be handed over in InDesign or MS Word 2016 (or compatible) format.	or are submitted with amendments and supporting evidence from trialling for those amendments.	
8	**Interim Review Meeting** Meeting with STA and item writers to review materials and outputs from internal review and informal trialling. Meeting will be used to discuss informal trialling, including key messages and problems, discuss the report, resolve issues identified with items and agree any changes to items. In the report the agency must say why the change is suggested and what evidence there is for the change.	Project Manager and Lead Item Writer attend Interim Review meeting on agreed date. The meeting will be chaired by STA. One of STA's independent curriculum advisors will attend this meeting.	Week beginning 1st September 2020

No	Deliverables/Outputs	Acceptance Criteria	Due Date
	Any further changes to materials will be agreed at this meeting. The Supplier will complete these and any other agreed amendments prior to final handover.		
9	**Final Handover – Critical Step** **Electronic Handover** – Supplier to hand over electronic files of the items and coding frames, source references, artwork, copyright statement and the item classification grid. Assignment/licences of IPR for DfE's benefit completed. If STA's portal or secure file transfer service is unavailable, an encrypted memory stick will be provided by STA. A template for the item classification grid is provided at Annex B. **Hard Copy Handover** - Supplier to hand over hard copies of the items and coding frames, and example pupil scripts.	Receipt of electronic materials specified and attendance at Final Handover meeting on agreed date ("Final Handover Date") 100% of specified hard copy materials received at STA by agreed date and materials are of appropriate quality as listed under Performance Requirements.	Week beginning 12th October 2020 (electronic handover / Final handover meeting) Week beginning 19th October 2020 (hard copy handover)

No	Deliverables/Outputs	Acceptance Criteria	Due Date
10	**Acceptance of Final Handover materials – Critical Step** Materials must be handed over as per specification, so that materials match templates as required and all other instructions are followed. If any errors are found following Final Handover or the materials are not compliant with this specification, all materials will be returned to the supplier for full checking and correction. Final payment will be withheld until this is completed. Fully checked and corrected materials should be returned no later than two weeks after the Final Handover date. STA will notify Suppliers once all Acceptance Criteria have been met.	100% of specified materials with STA no later than two weeks after Final Handover Date. All materials to be error free.	
11	**Lessons learnt meeting** To take place after completion of final acceptance if both STA and the Supplier are in agreement that this would be beneficial. The date of the meeting will be advised at project start up. Attendance will be for one full day maximum.	N/A	To be confirmed

4. Key Milestones and Key Payment Milestone dates

REDACTED

5. Key Payment Milestones and Key Payment Milestones Dates

Payment will follow the completion of the Key Milestones listed at Section 4 of the ITQ. The maximum Key Payment Milestones payable calculated in accordance with the Supplier's 'Cost Breakdown' table in Annex C of its proposal are:

REDACTED

TO NOTE:

- The total contract price is based on 100% of items being trialled. In the event that 100% of the items developed are not trialled, then, payment will be reduced on a pro-rata basis in accordance with Supplier calculations based upon the fixed and variable costs formula used to calculate the amounts in the Supplier's proposal for trialling of items.
- This work is VAT exempt.

6. Contract Management Arrangements

The Supplier shall be fully engaged on an on-going basis in regular Contract Management Reviews relating to this Call-Off Contract and the overarching Framework Agreement. These reviews provide an opportunity for the Department and the Supplier to discuss the end-to-end delivery of the Services which shall include but not be limited to:

planning;

progress;

risk management;

issue management;

continuous improvement;

proposed changes;

lessons learnt;

exit management.

Reviews will be carried out with Senior Management on a six month basis where the Department and the Supplier will meet to discuss Supplier performance, lessons learnt, continuous improvement, value for money, exit management and any other issues considered relevant by the Department.

7. Supporting documentation

The Science ITQ document for the 2022 Item Writing cycle sets out the full specification of requirements including the project deliverables, functional requirements and performance requirements. The original Science ITQ and the supplier's response are appended to this contract document.

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In witness whereof this Call-Off Contract has been duly executed.

Signed for and on behalf of the Department for Education:
REDACTED
Name and Title: REDACTED
Date: REDACTED

Signed for and on behalf of the Supplier:
REDACTED
Name and Title: REDACTED
Date: REDACTED