

PRIMARY APPLICANT DETAILS

Title
Name
Surname
Tel (Work)
Email (Work)

Address

COLLABORATOR DETAILS

<u>Role</u>	<u>STEM partner</u>
Title	
Name	
Surname	
Organisation	
Tel (Work)	
Email (Work)	
Address	

<u>Role</u>	<u>Head teacher or Principal</u>
Title	
Name	
Surname	
Tel (Work)	
Email (Work)	
Address	

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title
Name
Surname
Tel (Work)
Email (Work)

Address

COLLABORATOR DETAILS

<u>Role</u>	<u>STEM partner</u>	<u>Role</u>	<u>Head teacher or Principal</u>
Title		Title	
Name		Name	
Surname		Surname	
Organisation		Tel (Work)	
Tel (Work)		Email (Work)	
Email (Work)			
Address		Address	

School contact details:

Please enter your School Name

Please enter your school address

Please enter your school postcode

Please select your school level from the list below:

Primary

Please select the type of school from the list below:

State-funded

If you selected other, please provide details in the box below

No Response

STEM partner contact details:

Please enter the STEM partner's organisation name

Please enter the STEM partner's organisation address

Please enter the STEM partner's organisation postcode

Please select the type of organisation from the list below:

Higher Education Institution

Section 2 - Project Overview

Project title

This must be a short and snappy question that will be the focus of your project.

How many stars in the sky?

Please select the main strand that your project falls under from the list below:

Mathematics

List up to 5 (max) investigations that the students will carry out as part of this project

How far are the planets from the sun? (The sizes and distances of the solar system so they fit into our school playground/ into our hall, into a metre of paper).

How cold is cold? A look at extreme temperatures on planet Earth and other planets. Using data loggers to look at temperature around school, link to negative numbers.

How bright is the sun? Using a datalogger sensing, how light can vary from one place to another and over time.

Can I see it? A look at microscopes and how they can magnify everyday materials, just because we can't see it doesn't mean it is not there. Link to the University of [REDACTED] and their Microscopic department

How many stars in the sky? Expert speakers show how to access the visible universe, using telescopes to look at the night sky. A visit to the University.

Please provide a brief description of the equipment that you require for funding.

Microscopes, telescopes, temperature gauges (dataloggers that measure light, sound and temperature)

measuring equipment, metre sticks etc

Has your school applied for a partnership grant before?

Previous recipients of partnership grants may apply for further funding, as long as the new application is made one year or more after the previous application.

However, you must make sure that your new project is not a simple extension of your previous one.

No

Section 3 - STEM Partner Details

Please include the full name of your STEM partner here

Please include the job title of your STEM partner here

Relevant qualifications and/or experience

STEM partner's involvement

Please provide details on how the STEM partner will contribute to the project, by writing a short paragraph and adding details in the question below.

██████████ will work with ██████████ to answer our question on "how many stars are in the sky?" Being at the University ██████████ means that she has access to equipment, data and expertise that we can use.

This will enthuse the children at [REDACTED] and the other teachers into thinking about how to make data more accessible. Our project hopes to look at how large numbers can be made easier to understand.

[REDACTED] and her students have offered to come into school and work with the children; learning about how large the universe is and the amount of stars in our galaxy and beyond. We hope to get children to try and then visualise how many grains of rice there would be in a cubed centimetre / cubed metre. We will also be able to plot out the solar system in our school grounds and create a Darwin thinking trail.

[REDACTED] she will be able to help us make the implausible seem plausible. We are hoping to work with the [REDACTED] and the [REDACTED] to look at objects that have been magnified.

We anticipate working with [REDACTED] and her students for at least six afternoon sessions of two hours and 2 evening sessions of 2/4 hours. The afternoon sessions will cover working scientifically skills and answering the questions for investigation using dataloggers. The evening sessions, during our Space Camp sleepovers, will enhance the children's enjoyment of science and increase their science capital and they will be able to talk more informally to the scientists.

Please enter the details of the STEM partner's activity below. Please list each activity separately, including time per session and frequency.

Humans, particularly children, love huge numbers, but what do they mean? What is a thousand? a million? a billion? Our project would link the desire to know large numbers with the real world and try and make them accessible.

Each session would be one hour, help in planning and delivering the sessions

- 1) Solar system in my pocket - relative sizes and distances of planets in our solar system
- 2) solar system in our school grounds - a walking/ thinking trail around our school based on the solar system (to create the trail would take longer)
- 3) Looking at extreme temperatures around the Earth
- 4) Using data loggers to measure temperature, light and sound changes
- 4) investigating the melting points of different elements - finding out about the periodic table.
- 5) Can I see it? Using microscopes, looking at objects that have been magnified.
- 6) Art work linked to microscopic pictures

Space Camp

An overnight stay for our year 5 children where we can use the telescopes. A visit from [REDACTED] University astronomy department to find out how many stars we can see. Creative art work based on the moon and stars.

Has the STEM partner applied for a partnership grant before?

No

Section 4 - Participants

How will the students taking part in the project be selected?

Include information for core and additional participants if applicable. How do you plan to include diversity as a consideration?

120 children from Year 5 and 6 will take part in our project. We will also communicate the project to the rest of Key Stage 2 in the form of presentations and assemblies. We will also hold an evening session to

showcase to our parents and carers the children's work.

Please select your school region from the list below.

England

Please select which student year(s) will participate in your project from the list below:

Year 5

Year 6

What is the total number of students who will be involved in your project?

120

What is the total number of students at your school?

400

Will any other schools be involved?

If so, please give details.

If the project is successful I will share the resources with [redacted] Primary Science Teaching Trust [redacted] and [redacted] Primary Science Network.

Section 5 - Planning

Please select the anticipated start date of your project which must be no earlier than the next autumn term.

01 October 2018

Please select the anticipated end date of your project.

22 March 2019

Describe the rationale for your project, using the headers below:

a) Describe below the key learning objectives of this project.

b) How will your students benefit from participating?

c) What skills and experiences will they learn that they wouldn't ordinarily learn as part of their usual lessons?

d) Explain clearly how scientific methodology will be employed throughout this project.

The key learning objectives are;

* increase achievement in mathematics and science

* to increase mathematical and scientific enquiry, ask questions and answer them

* to work from the known to the unknown, through discussion, explanation and reasoning

* to read, write, order and compare numbers, interpret negative numbers looking at temperature

* to use the vocabulary of estimation, comparing and ordering numbers

B) How will the students benefit

* working with STEM Ambassadors and Lecturers and Students from the University [redacted]

* increase knowledge and aspirations of university and future careers

* increase confidence in presenting ideas and information based on scientific and mathematical skills

*improve social skills of working together and reaching a compromise

C) Skills and Experiences not necessarily learnt will include

* Experiences - working with STEM Ambassadors/ students and lecturers from the University

*Experiences - sleeping over night in school and taking part in mathematical and space related projects

D) Scientific Methodology

1) Children will investigate the distances between the planets and look at ways to make these understandable/ fit into the school playground.

2) Children will use dataloggers and internet research to investigate extreme temperatures this will result in looking at negative numbers and the differences in temperatures.

3) Microscopes and how they can magnify objects, looking at images that have been zoomed in, and investigating by how much

4) Working with University investigating how many stars, counting stars in a small area and multiplying

Our methods will be to intrigue and create curiosity amongst the children so that they begin to ask questions and want to answer them, they will want to discover the answers themselves. Learning together the children will adapt and seek solutions to these challenges. They will use their skills of estimation, prediction and inference; going from the known to the unknown. Children will develop professional dialogues and discussions so as to reach a compromise.

All their solutions will be showcased to the community and a 'newspaper' of their work will be produced.

Timeline for project

Please indicate key dates and milestones, such as when you expect students to have completed training, hypothesis testing, analyses and any dates where the project will be shared.

Date	Activity	Who involved?
11 March 2019	Family STEM evening	Children showcasing their work
31 October 2018	Visit to the University [REDACTED]	Links with our STEM Partners Physics
30 November 2018	Visit to the University [REDACTED]	Links with our STEM Partners Maths / Microscopical
28 February 2019	Creation of newspaper	C children and teachers

Clearly explain why you need the equipment you have requested funding for.

Telescope to use in the evening sessions so that children can look at the stars and wonder.

Dataloggers that measure light, sound and temperature, to collect data and interpret the meaning, these will be used for collecting data for temperature and light. There is also the capacity to collect information and data on sound.

Space Camp Sleepover equipment linked to mathematics - a range of games that help children understand mathematical concepts such as lunar landing, car rush,

Please give a brief description of the legacy this project will have. For example: how will it be sustained? Can it be repeated with other students? Can it be repeated with the involvement of another school?

If successful the ideas and lessons can be compiled and used with future year groups at [REDACTED]. Through our links with the Primary Science Teaching Trust, the ASE and [REDACTED] Primary Science Network we hope to share [REDACTED] experiences and encourage others to complete some or all of the

project.

Locally our Network and Cluster group meet regularly and it will be possible to share our project whilst it is going on and afterwards with the group. It will also be good to have their input on the success of the project.

The Primary Science Teaching Trust holds annual conferences with science leaders and fellows from the whole of Great Britain and it would be possible to do a workshop at one of these events to share our ideas and findings.

We will showcase our work in a Community evening event and create a 'newspaper' of our findings and activities.

Ultimately it would be great to attend Science on Stage and share our project with a wider audience.

Section 6 - Project costs

Period	Item Type	Item	Field	£		
2018 - 2019	Project Item	Travel Cost to the University	Cost	£240.00		
			Latest Cost	£240.00		
		dataloggers	Cost	£1,924.00		
			Latest Cost	£1,924.00		
		Telescope	Cost	£449.00		
			Latest Cost	£449.00		
		Games for Space Camp Sleepover Event	Cost	£100.00		
			Latest Cost	£100.00		
		Photocopying/ stationery/ advertising for Evening event	Cost	£50.00		
			Latest Cost	£50.00		
		microscope x3	Cost	£150.00		
			Latest Cost	£150.00		
		2018 - 2019 Total			Cost	£2,913.00
					Latest Cost	£2,913.00

Total	Project Item	Travel Costs to the University	Cost	£240.00		
			Latest Cost	£240.00		
		dataloggers	Cost	£1,924.00		
			Latest Cost	£1,924.00		
		Telescope	Cost	£449.00		
			Latest Cost	£449.00		
		Games for Space Camp Sleepover Event	Cost	£100.00		
			Latest Cost	£100.00		
		Photocopying/ stationery/ advertising for Evening event	Cost	£50.00		
			Latest Cost	£50.00		
		microscope x3	Cost	£150.00		
			Latest Cost	£150.00		
		Total			Cost	£2,913.00
					Latest Cost	£2,913.00

Justification for consumables (incl. fieldwork)

Please fully justify your request for consumables, including expenses for fieldwork.

Taking children to the University [REDACTED] to work with the Physics and Mathematics department will involve a coach.

Data loggers will not be a consumable but a very valuable resource that can be used by our whole school - upon sharing the resources with our cluster and network we would be able to ensure that all children would get to use them.

A telescope is a must for our Space Camp Evenings to answer the question how many stars in the sky. Games - logic and ones that reinforce mathematical skills will need to be purchased and can be used by all the children.

Photocopying - we would also like to produce a 'newspaper' written by the children to circulate to all

██████ families and the local community about our activities.
Microscopes - would help children understand the microscopic world and how things can be made larger

Please provide quotes for all individual items over £200

Section 7 - Lead Applicant Declaration

Declaration

I hereby declare that the information provided in this application is true and correct to the best of my knowledge.

Checked

I understand that all reports must be submitted in a timely manner otherwise the Royal Society retains the right to reclaim grant money.

Checked

Partner details

Name and Surname

Date

20 March 2018

Section 8 - Collaborating Applicant Declaration (STEM partner)

Declaration

I hereby declare that the information provided in this application is true and correct to the best of my knowledge.

Checked

Partner details

Name and Surname

Date

21 March 2018

Section 9 - Head Teacher/Principal Support

Full name:

Statement of support

Please provide a statement in support of the application.

Our school has an established track record of successful science provision. We are committed to excellent maths and science teaching and working in collaboration with other organisations to promote science teaching and STEM subjects by involving parents and families in their children's learning. We are working to develop science capital, encourage aspirations to go to university and establish awareness of STEM careers. We hope that many of our children will be the first in their family to go to university. This project would enable us to continue this work with our children and community.

I fully support this applicant and this application.

Supporting documents

Please upload any documents (PDF), that you feel may support this application.

No Response

I understand that the Royal Society retains the right to reclaim grant money if the Lead Teacher does not submit the required reports in a timely manner.

Checked