

‘The Secret World of Gases’ A National Science Engagement Programme Information and Invitation to Participate



A National Programme for Families

Deadline for Applications: Tuesday 11 July 2017

An Overview

Gases are used in all areas of science, engineering, medicine and life in general. This project will bring alive a range of gases and celebrate their unexpected uses now and their huge potential for the future, especially the technological innovation that is vital as we move towards a lower carbon and more energy-efficient society.

For many years, Science Centres have been using gases in a variety of ways to engage families and school groups. Much of this has focussed on rocketry, physics programmes, and demonstrations with liquid nitrogen and dry ice.

This National Programme would offer science centres fresh new ways to talk about and demonstrate gases, from hydrogen cars and food packaging to medicine and future travel. In particular it would bring alive the range of gases that BOC work with, and celebrate and champion chemistry with young people and their families. There will be a particular focus on showcasing innovations that are set to create a greener, more sustainable environment and sources of fuel for our future.

The UK Association for Science and Discovery Centres (ASDC) is the UK's vibrant national charity that brings together the leading informal science engagement organizations in the UK, including all the major science and discovery centres and science museums.

We are now seeking nine Science and Discovery Centres or Science Museums across the UK to partner with us for this exciting and unique national programme.

We are asking the nine selected UK science centres to leverage their exceptional talents in engaging families with science in a fun and engaging ways, as well as their relationships with press, PR, universities and other partners to publically celebrate the science of gases in a way that works for them and their family audiences.

Each centre will be given a host of resources, including a bespoke set of equipment, an adaptable family show, staff training at the residential training academy, training manual and support and a series of hands on activities for meet the expert sessions. You will also be given a marketing pack with the branding and associated assets, a website and media releases.

Overall the programme aims to reach 54,000 people, with each centre reaching 6,000 people with delivery at times you choose from the February half-term 2018 to the October half term 2018.

All ASDC members may apply using the associated application form. The deadline is July 11th.

All applications should be sent to andy.mcleod@sciencecentres.org.uk

Information on this National Programme

The Programme Vision and Mission

The Vision: To engage, inspire and involve **school-age children and their families** with the amazing stories and science of gases, investigating the latest innovations, dispelling myths and exploring how gases will be used for a greener future.

The Mission: To deliver an inspirational and hugely exciting national programme of hands-on activities and experiments for children and families across the UK, through the successful infrastructure of the UK's science and discovery centres and science museums.

The Partnership

This programme will be directed and project managed by The UK Association for Science and Discovery Centres who have considerable experience managing national strategic multi-partner science engagement programmes. This programme is funded through the generous financial support of BOC and The Royal Society of Chemistry, and is delivered in collaboration with three expert content partners:

- The Royal Society of Chemistry
- BOC
- Winchester Science Centre

Leveraging the ASDC national network

The UK Association for Science and Discovery Centres (ASDC) is a national organisation that brings together the UK's major science engagement organisations to play a strategic role in the nation's engagement with science. Within our membership are over 60 of the nation's largest publically accessible science centres, discovery centres, science museums and scientific bodies. Together our vision is for a society where people of all backgrounds and in all parts of the UK are inspired and fully involved with the sciences.

Every year in the UK, 20 million people of all ages and backgrounds choose to engage with science at one of the UK's science and discovery centres or science museums. This equates to 385,000 people every week who come to our member centres to explore and discuss science in an involving and personal way.

This programme leverages that national infrastructure, expertise and investment. Science and discovery centres and science museums are already embedded in the heart of their communities in England, Northern Ireland, Scotland and Wales. They all have long-term relationships with communities, schools and families as well as local institutions such as universities, industry and the media. These relationships we hope would be mobilized for this national programme offering families unusual and exciting opportunities to discover, discuss, question, test and explore science and the latest technologies.

Outputs of the National Programme:

This project will deliver the following:

1. An exceptional and highly adaptable family show targeted at 5-12 year olds and their families for use by science centres and museums across the UK.
2. A set of hands-on resources and equipment for each centre.
3. A national training academy to train two science centre staff from each of the 9 selected UK science centres and museums to enable them to run the entire programme and to maximise visitor participation and opportunities across the UK.
4. A meet-the-expert session format for family audiences with potential introductions to experts from BOC and The Royal Society of Chemistry.
5. A press and marketing pack, with images, sample press releases, approved copy for web and flyers, developed in partnership with BOC and the Royal Society of Chemistry.
6. A vibrant and dedicated project website to allow visitors greater access to in-depth information about the show and provide a central hub for participating science centres to access up-to-date resources and share best practice.

The Programme Goals

The six key goals for this national programme, in order of importance, are as follows.

1. To inspire children and their families nationally, with a new sense of curiosity, questioning and creativity in relation to gases and their potential in future technologies.
2. To inspire children and their families to explore, test, experiment and discuss the amazing range of science and engineering needed to develop new gas technologies.
3. To inspire school aged children within the family learning environment to consider careers in chemistry, science and engineering more widely.
4. To build family science capital, given we know 67% of young people feel they get most careers advice from family, and that family science capital is the biggest predictor of whether students will study science (and 80% of a schoolchild's waking time is spent out of school).
5. To increase the public engagement opportunities of BOC scientists (if they wish), members of The Royal Society of Chemistry, scientists and engineers and enable the public to meet them in informal settings.
6. To train science engagement professionals, embedded in ASDC member organisations across the UK, to engage the public with the latest in gas technology, future fuels and sustainability so they can continue to enthuse their 20 million visitors into the future.

The Key Audiences

The key audiences for this national programme will be:

1. Young people aged 5-12 enjoying learning about gases and their future uses, sustainability, engineering and chemistry in informal contexts.
2. Parents, families and carers of these young people who are equally inspired and can continue to encourage their children long into the future.
3. Science centre and museum staff who will become experts in using gases and use this knowledge for greater and more wide-ranging science learning programmes around chemistry and the physical sciences.

Project Legacy

The excellent hands-on set of equipment, resources and handbook we create will remain with the science centres to inspire and involve audiences into the long term. In addition, a large cohort of public engagement professionals in science centres across the UK will be trained to run 'The Secret World of Gases' programmes celebrating gases and latest technologies. Our aim is that this will put a host of science engagement professionals at the forefront of gases and using them with confidence, and discussing with the public how they are used now and will be used for a greener future. We hope that after the funded part of this programme, this expertise, knowledge and new equipment will then be used across the wider science centre programmes into the future to celebrate wide areas of chemistry and STEM.

Note on Intellectual Property

ASDC strives to advance the field by ensuring that everything we create is open for everyone to use, so that public engagement professionals across the UK and world may benefit from this programme and all the ideas and expertise within it.

In line with this, all the resources created by this ASDC programme will be licensed under creative commons (Attribution-Share Alike). To help science centres and scientists to continue to innovate together, and to find ever more brilliant ways to engage families, school students and the public more widely, we ask that all participating centres follow this spirit of collaboration and share any new activities that evolve from the project under creative commons (attribution to their science centre and this programme).

What is on offer for selected science centres and museums

The programme will offer the nine selected centres the following:

1. An exceptional and highly adaptable set of bespoke equipment to the value of approximately £3,000 for each science centre to enable delivery of the family show and other events and hands on activities.
2. A highly engaging and adaptable family show targeted at 5-12 year olds and their families for use by science centres and museums across the UK.
3. A grant of £3,000 to assist your science centre with the delivery of the programme. This you may spend on whatever you need to assist in delivering special events and the family shows, including staff time.
4. A meet-the-expert session format for family audiences with potential introductions to experts from BOC and the Royal Society of Chemistry.
5. Full training, including two funded places for your staff at The ASDC National Training Academy held at Winchester Science Centre on November 7-8 2017, to train your staff to run the entire programme and to maximise engagement opportunities. Travel, food and accommodation will be paid for by ASDC.
6. Training resources including two copies of the bespoke project handbook and online support to help you with your delivery and to train all your front of house and delivery staff back at your centre.
7. A marketing and press pack, with the national project logo, branding assets and guidelines, approved copy for your website and flyers, marketing images of family events and a sample press release.
8. Standardised forms for your evaluation and an easy online submission mechanism with guidance how to use it.
9. On- going support from ASDC on the phone and online to assist you with all areas of the project

Commitments of the nine selected Science Centres /Museums

The nine selected science centres and science museums will need to commit to the following:

1. To reach at least 6,000 members of the public (family audiences) in a high quality, engaging manner between February 2018 and October 2018.
2. To run the 'The Secret World of Gases' Show for families at your science centre in weekends and holidays, and celebrate the opportunities at special events, festivals, evening events, sleepovers and outreach as you so choose. The show will be modular, flexible, and should be offered to your visitors at no additional cost^{**}.¹
3. To ensure two members of staff participate fully in the two-day residential training academy on November 7th – 8th, 2017 in Winchester where they will learn how to run the family show and use the equipment, how to engage the audience with the science of gases and the nuances involved. They will also be shown all the marketing and press resources and how to use these and to check they know how to safely operate and maintain all the equipment. These two members of staff will then have responsibility to train all staff at their centre and remain as the point of contact for the programme.
4. To ensure that the show and all activities are delivered in accordance with the project Goals, for example ensuring gender equity and celebrating STEM careers, and delivering to the key audiences as outlined above.
5. To have a quality control and training system in place that maintains and highlights the integrity and accuracy of the science and the messages your staff are sharing with the public. This must include regular (monthly) reviews of your staff that are running the show by your staff that attended the Training Academy. Any show you run must uphold the scientific credibility of ASDC and the funders and other partners.
6. To share information with the ASDC project manager for the purposes of reporting and evaluation in a timely manner and on the dates requested.
7. To carry out the programme evaluation, including collecting and collating of data, and submitting this online (or other electronic method as specified) before the deadline.
8. To market the family shows in accordance with the guidelines using the partner logos (including those of BOC, Royal Society of Chemistry and ASDC), and project brand exactly in accordance with our guidelines.

¹ ** For clarification, if your institution charges an admission fee, The Secret World of Gases show must not be an additional cost to visitors. If you do not charge an admission fee, but would intend charging visitors to attend The Secret World of Gases show, please contact Andy McLeod to discuss.

9. To comply with all relevant laws and best practices in regard to data protection, child protection and health and safety, and to understand that all these areas are the sole responsibility of the centre delivering the activity.
10. That your centre is responsible for all health and safety training of your staff, and you will be fully responsible for all risk assessments for all experiments and activities you do and specifically you will undertake risk assessments for every activity, in every new context and with every new audience type to ensure the safety of all, and you have full freedom not to run any activity at any time should you choose.

When to Deliver Activities

Delivery of your family show and activities can be anytime from February Half Term 2018 until October Half Term 2018. Your final report will be due to ASDC on 5th November 2018. You will specify in your application which of the half terms, holidays (summer and / or Easter) and weekends you will be running the show and activities.

2017		
7 - 8 November 2017	The Secret World of Gases training academy at Winchester Science Centre	For 2 members of staff from each centre
2018		
February 2018	February Half term	Delivery can begin from any time from February 1. Please tell us if you wish to deliver before the half term.
31 October 2018	Completion of the programme delivery	A minimum of 6 ,000 people reached by each Science Centre
6 th November 2018	Completion of the programme and Submission of your final report, metrics and evaluation results on line.	A minimum of 6 ,000 people reached by each Science Centre

Notes about delivery and dates

Science Centres will be trained and have all the resources to begin delivery in February 2018. You are free to choose your start date, but you must comfortably complete your contracted deliverables (Minimum of 6,000 per centres) by 31 October 2018 and all reports and evaluation data submitted to ASDC by 6 November 2018.

Numbers of participants you commit to engage

Overall the programme will engage 54,000 people across nine centres. Selected science centre partners will need to engage a minimum of 6,000 people per centre. These should all be in your family audiences (not schools) and be groups with children (rather than adult only groups). The

children's target age range is 5-12 so we would expect you to be clear you are reaching within these ages. We would therefore expect most of your activity to be during the school holidays. The definition of a family is any informal group that has at least one child in it (that is not a school). Badged groups during the holidays may be included (max 10% of your total), but the focus is families. For clarification, you may deliver any of the activities to schools groups (and we would be delighted to hear about this) but these numbers could not be counted in your overall numbers reached with the programme.

How might you reach these people

Family Shows

Run the 'The Secret World of Gases' show for families at weekends, e.g.:

- 35 people per show, 3 times each day on Saturday and Sunday, x 13 weeks = 2,730 people
- Plus at half terms 40 people per event, 4 times a day x 18 days = 2,880 people
- Totalling 5,610

Meet the expert events

As part of 'The Secret World of Gases' we warmly encourage you to invite chemists, gas experts, hydrogen engineers and other related scientists from your local university, or other contacts. If you would like introductions you are welcome to ask ASDC to introduce you to the Royal Society of Chemistry member's network and BOC experts who have expressed an interest in the programme and are local to your Science Centre.

In terms of reach, if two scientists are talking to visitors on a busy floor from 10am-4pm, and each scientist talks to a family of 4 for ten minutes, whilst another 4 people look on and listens, they will engage 96 people per hour. Across 6 hours they will have interacted with 576 people. Running 4 days of events will reach 2,304 people.

Festivals, special events, community groups, family events, summer shows,

Think broadly when deciding what activities you want to run for families. We want to engage widely not necessarily only those visiting your science centre. Inviting experts to join you at festivals and other public events would be great (please note we expect numbers from festivals etc, to be a best estimate of actual people engaged with, and not the total entry numbers to these large events). For clarification we are also happy to receive applications where all activities take place with your visitors in your centre.

Reporting and Evaluation

Selected centres will need to commit to the reporting and evaluation as detailed below:

- To supply to ASDC with the metrics of how many people have taken part and what they did. We will collect this data in the summer (interim reporting July 6) and at the end of the project (November 6 2018).
- To hand out short evaluation forms to families and to collate the evaluations and write them online in the manner given. We anticipate this online submission will take a temp or staff member max 10 hours at £10/hour and would be keen to see this £100 costing in your budget. Evaluation results will be needed online from each centre at the summer (Interim reporting date July 6 2018) and in full within 2 weeks of your last delivery, and by November 6 2018 if you are delivering in the October half term.
 - An interim report on your activities will be required on July 6 2018. If you have not begun delivery at that point you will simply submit your plans.
 - A Final report on your activities will be required on November 6 2018, including publishable photos.

The Grant and your budget

The grant of £3,000 may be used to contribute to staff time, marketing, scientist involvement or other costs at your organisation's discretion. All staff should be charged at £250 per day. You may also use the grant for consumables or equipment. Include the £100 to input the evaluation data online.

In your application please specify how you will use the grant, as well as detailing your organisation's in-kind contributions in the table provided. As this is provided as a grant, you will not be able to add VAT to the invoice £3,000, any VAT considerations would need to be included within this amount.

The Application and Selection Process

The deadline for applications is 11pm on 11th July 2017.

The nine participating organisations will be selected through a competitive tender process.

Organisations wishing to apply must fill in the application form detailing what they will do. This will then be what you are contracted to deliver.

Selection panel

The participating organisations will be selected by a selection Panel, made up of the following people:

- ASDC CEO and Project Director, Dr Penny Fidler
- ASDC Project Manager, Andy McLeod
- A representative from BOC
- A representative from Royal Society of Chemistry

Eligibility

This grant is only open to all CURRENT members of The UK Association for Science and Discovery Centres. You will be asked to ensure we have received, or will receive, your membership for all years this grant is active.

If you have any questions about your membership please telephone the project manager.

Selection criteria

Priority will be given to Science Centres and Museums that:

1. Demonstrate a strong track record in delivering high quality science engagement activities to families.
2. Demonstrate a clear passion and enthusiasm for 'The Secret World of Gases' and the content area around gases and chemistry. Specifically showing how you will deliver the programme and share this great topic with families showcasing great innovations and interesting ways gases are used now and will be used for a greener future.
3. Demonstrate the desire and plans to embed the activities and expertise into your public or schools programme, to continue to run activities on gases in the future, beyond the funded part of this project.
4. Demonstrate the desire to get scientists and other external experts involved in the programme.
5. Show in their application the desire to run a host of the types of events, as well as creative and clever ideas for high-profile events and activities to engage as many people as possible.
6. Collect data for the metrics and undertake the evaluation and reporting
7. Show commitment to assuring the quality and the accuracy of the science presented by all staff, as well as excellence in how the families are engaged.
8. Have a marketing professional (or equivalent) in place to maximise reach and profile.
9. Will use social media as an integral part of the programme. and share it widely
10. Show in the application that they are addressing the goals, key audiences and the vision and mission of this programme.

The Panel will also look at the following considerations when selecting the nine centres:

1. A good geographic spread across the UK
2. A mixture of large and small Science Centres
3. A mixture of Science Centres in rural and urban settings

The Bidders' Conference Call

ASDC will host a conference call at 2pm on **Friday 30th June 2017** to answer any questions from all potential bidders in an open manner. Please register on the ASDC website, and book through Eventbrite.

Key Dates

Bidders' conference call	Friday 30 th June 2017, 2pm
Deadline for Applications	Tuesday 11 th July 2017 11pm
Selection Panel Meets	July 2017
Notification of success	Friday 4 th August 2017
Grant payment 1 (£1,500)	Wednesday 28 th February 2018
Science Centres Training Academy hosted by Winchester Science Centre.	Tuesday 7 th – Wednesday 8 th November 2017
Delivery of equipment to centres	January 2018
Interim Reporting Date	Friday 6 th July 2018
Delivery window (for the purpose of reporting)	February 2018 - October 2018
Final submission of your evaluation and report to ASDC	Tuesday 6 th November 2018
Grant Payment 2 (£1,500)	Friday 30 th November 2018

How to apply

To apply, please fill in the application form, that is also available on the ASDC website. Re-save your application form in the following format: 'The Secret World of Gases' application – name of your centre'.

Please email your application form to:

Andy McLeod,

ASDC Special Project Manager

Andy.McLeod@sciencecentres.org.uk

Deadline for Applications: 11pm 11th July 2017

Please cc your application to info@sciencecentres.org.uk

Ensure you get an email response from the info line saying your email has been received and call us if you do not.

Any questions please feel free to phone

Andy McLeod, Special Projects Manager

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